

KIC 009881909

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
009881909-01	OBS	No	0.507848	131.786098	17.8	3.619	10.6	7.9	2.60	7103	1.13	69858.79
009881909-02	OBS	No	18.637909	149.096319	107.3	1.632	10.5	2.9	2.60	7103	3.15	572.80
009881909-03	OBS	No	22.199200	134.663063	518.3	1.166	10.5	10.6	2.60	7103	6.06	453.68
009881909-05	OBS	No	17.363529	139.852949	188.7	2.437	9.6	6.1	2.60	7103	3.85	629.53
009881909-06	OBS	No	17.880135	148.825196	218.6	4.178	10.8	7.3	2.60	7103	4.41	605.39

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009881909-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
009881909-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
009881909-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—CENT_SATURATED
009881909-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_SATURATED
009881909-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

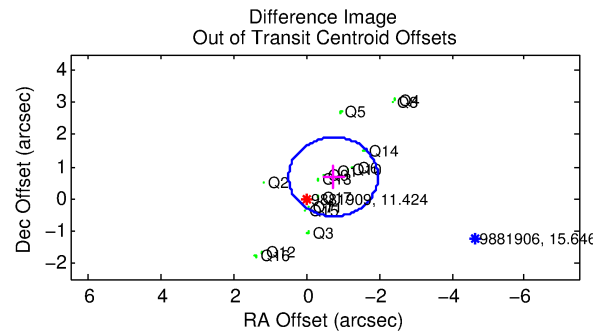
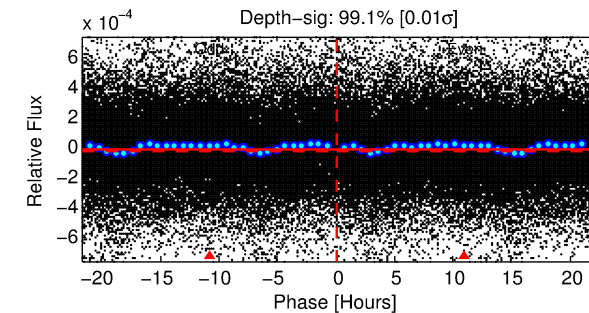
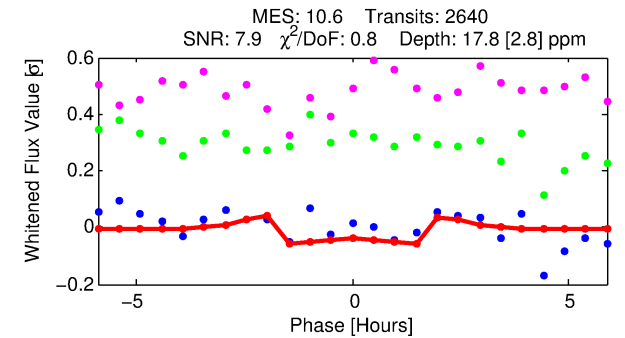
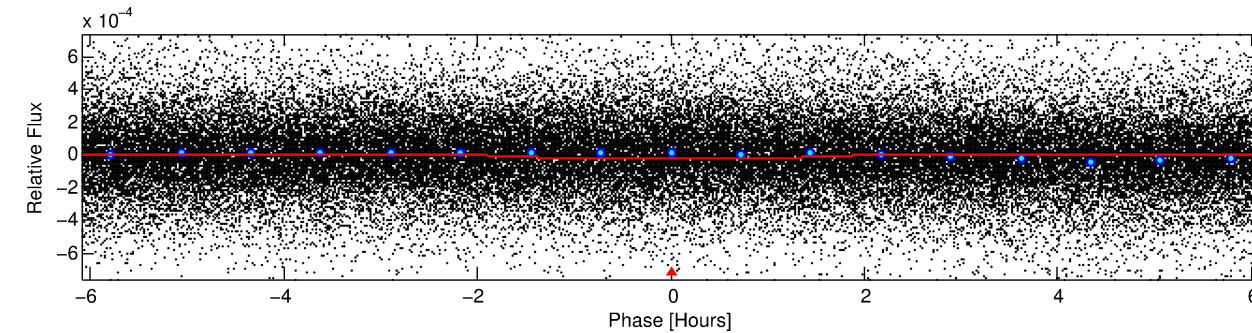
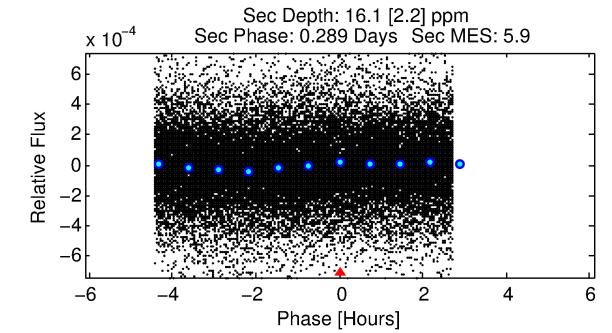
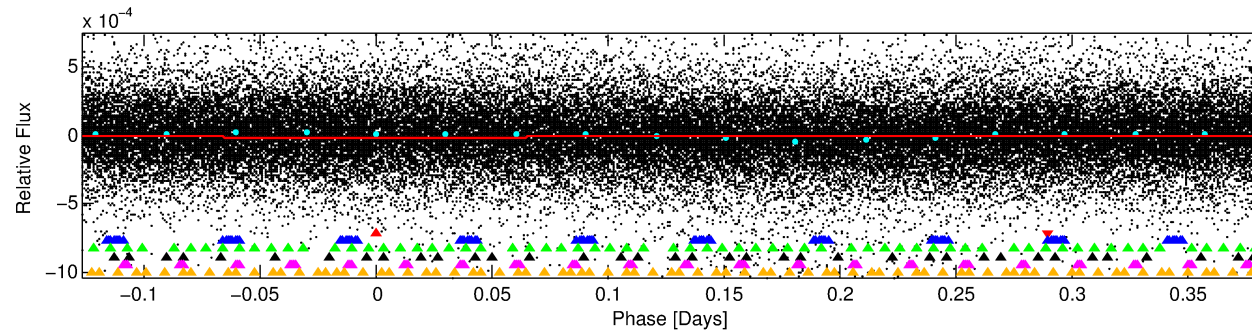
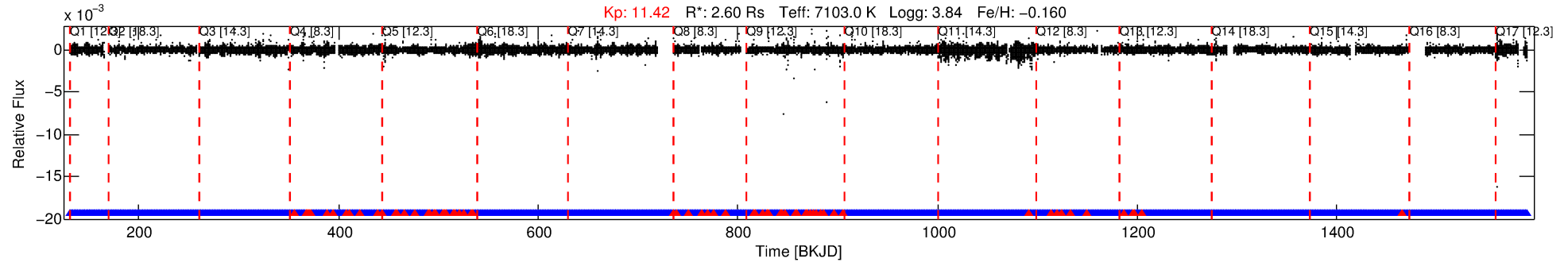
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009881909-01

No Significant Match Found

DV One-Page Summary

KIC: 9881909 Candidate: 1 of 6 Period: 0.508 d



DV Fit Results:

Period = 0.50785 [0.00001] d
Epoch = 131.7861 [0.0020] BKJD
Rp/R* = 0.0040 [0.0013]
a/R* = 1.19 [0.62]
b = 0.50 [2.62]
Seff = 69858.79 [45574.86]
Teq = 4146 [676] K
Rp = 1.13 [0.62] Re
a = 0.0148 [0.0061] AU
Ag = 1.52 [1.39] [0.38σ]
Teffp = 7118 [1186] K [2.18σ]

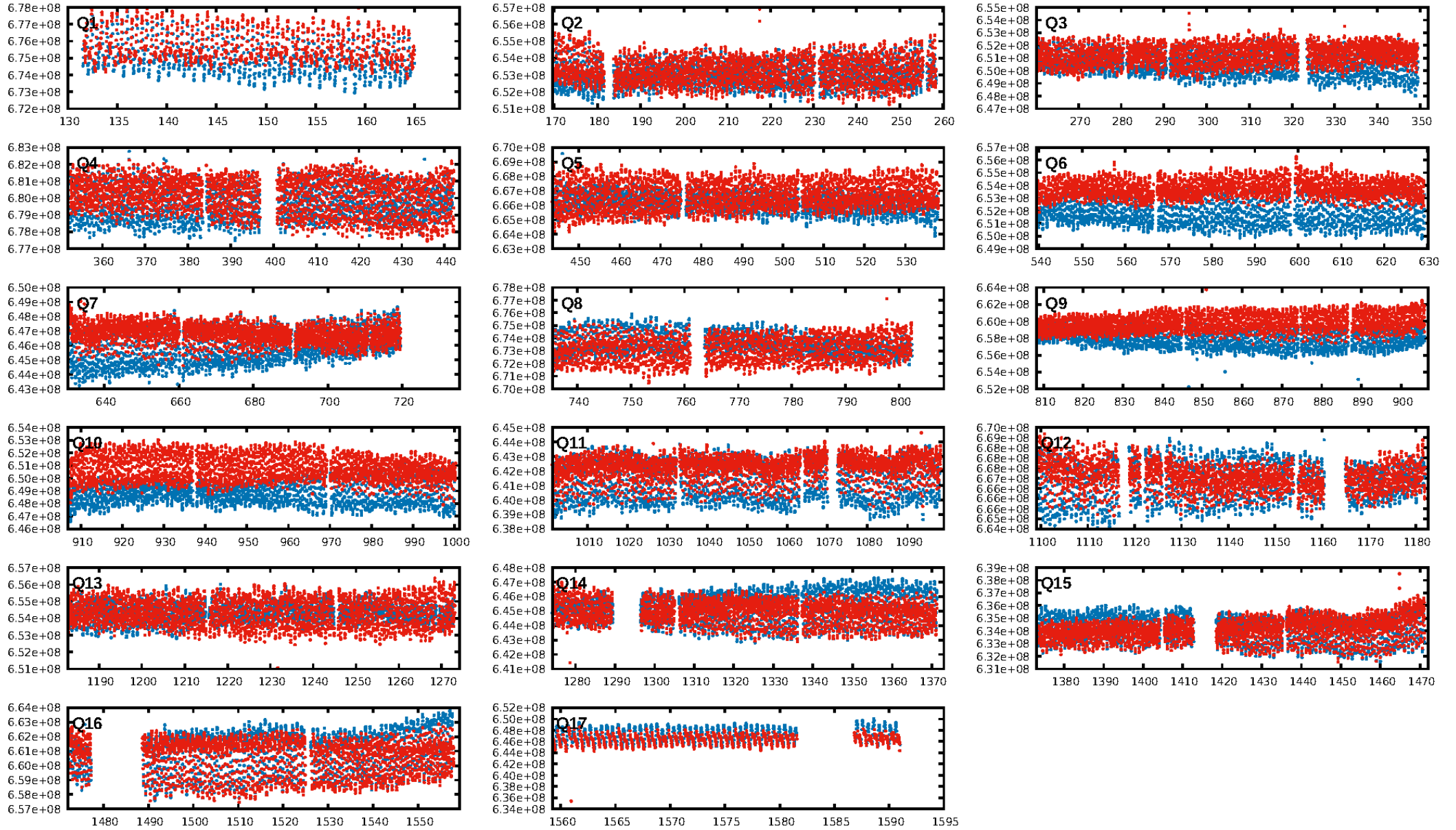
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [92.71σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.70e-08
RollingBand-fgt: 0.97 [2450/2521]
GhostDiagnostic-chr: 2.395
Centroid-sig: N/A
Centroid-so: 0.836 arcsec [2.16σ]
OotOffset-rm: 1.008 arcsec [2.46σ]
KicOffset-rm: 1.100 arcsec [2.67σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.24 [4/17]
DiffImageOverlap-fno: 1.00 [17/17]

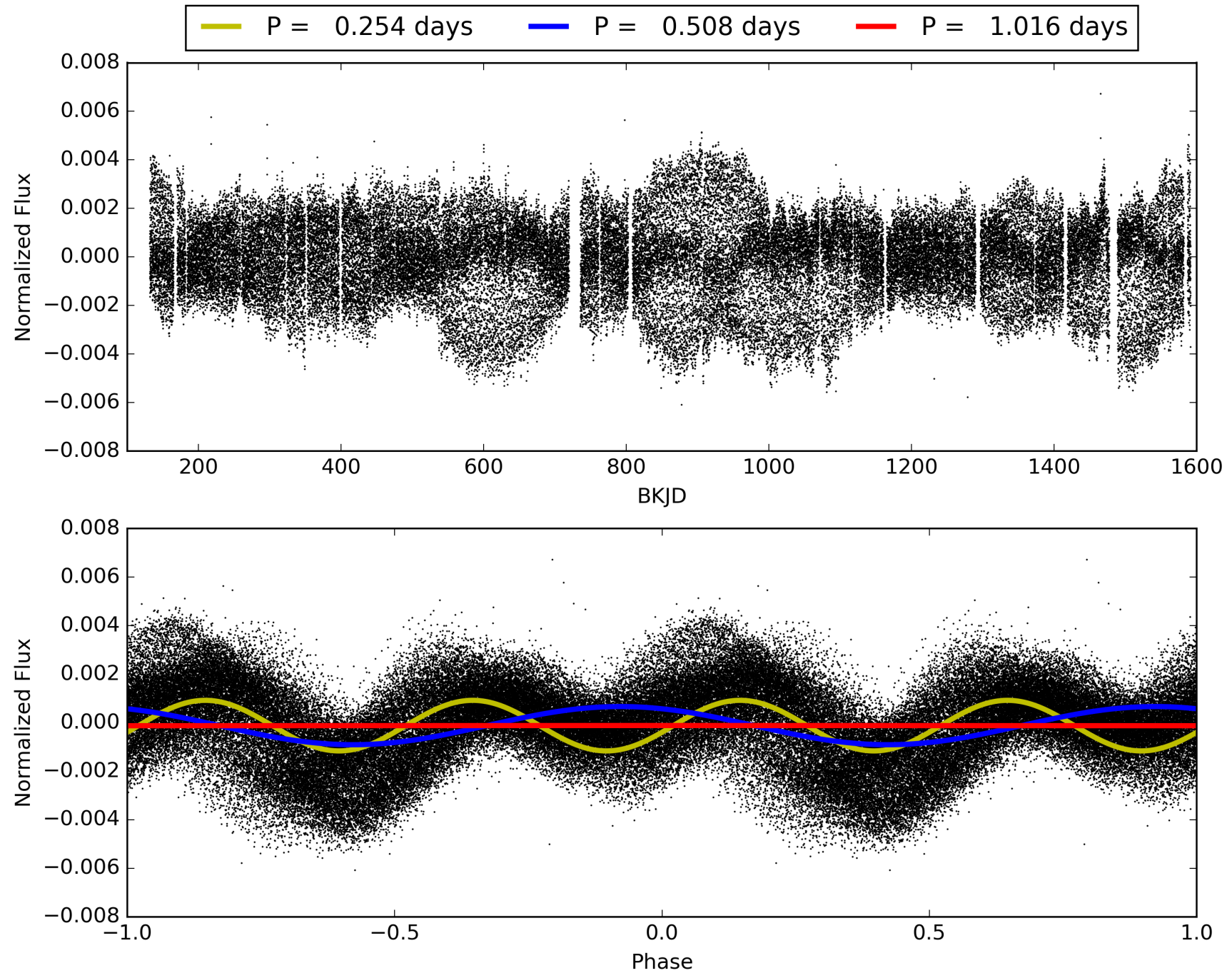
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:23:29 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009881909-01, PDC Light Curves

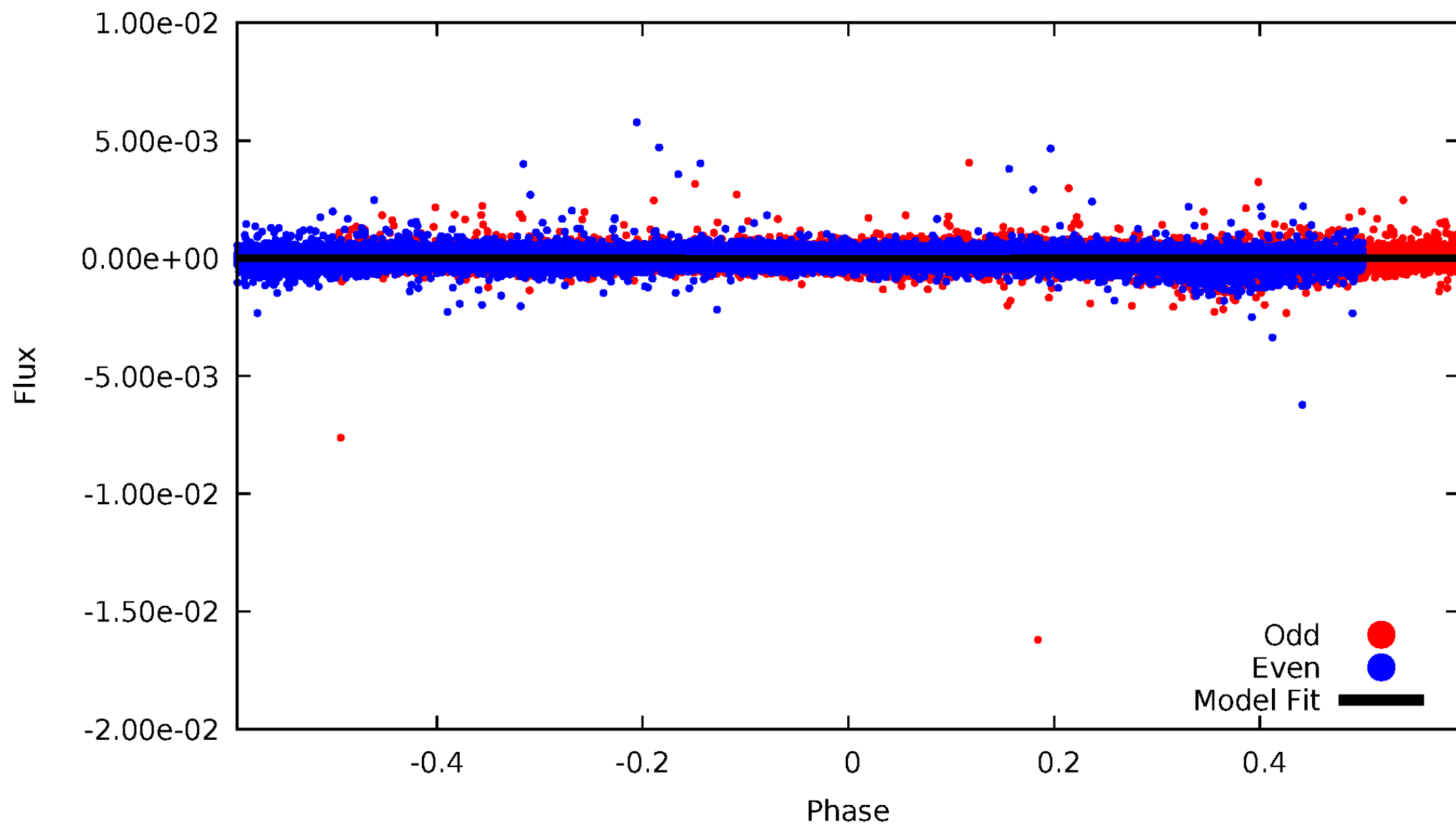


TCE 009881909-01



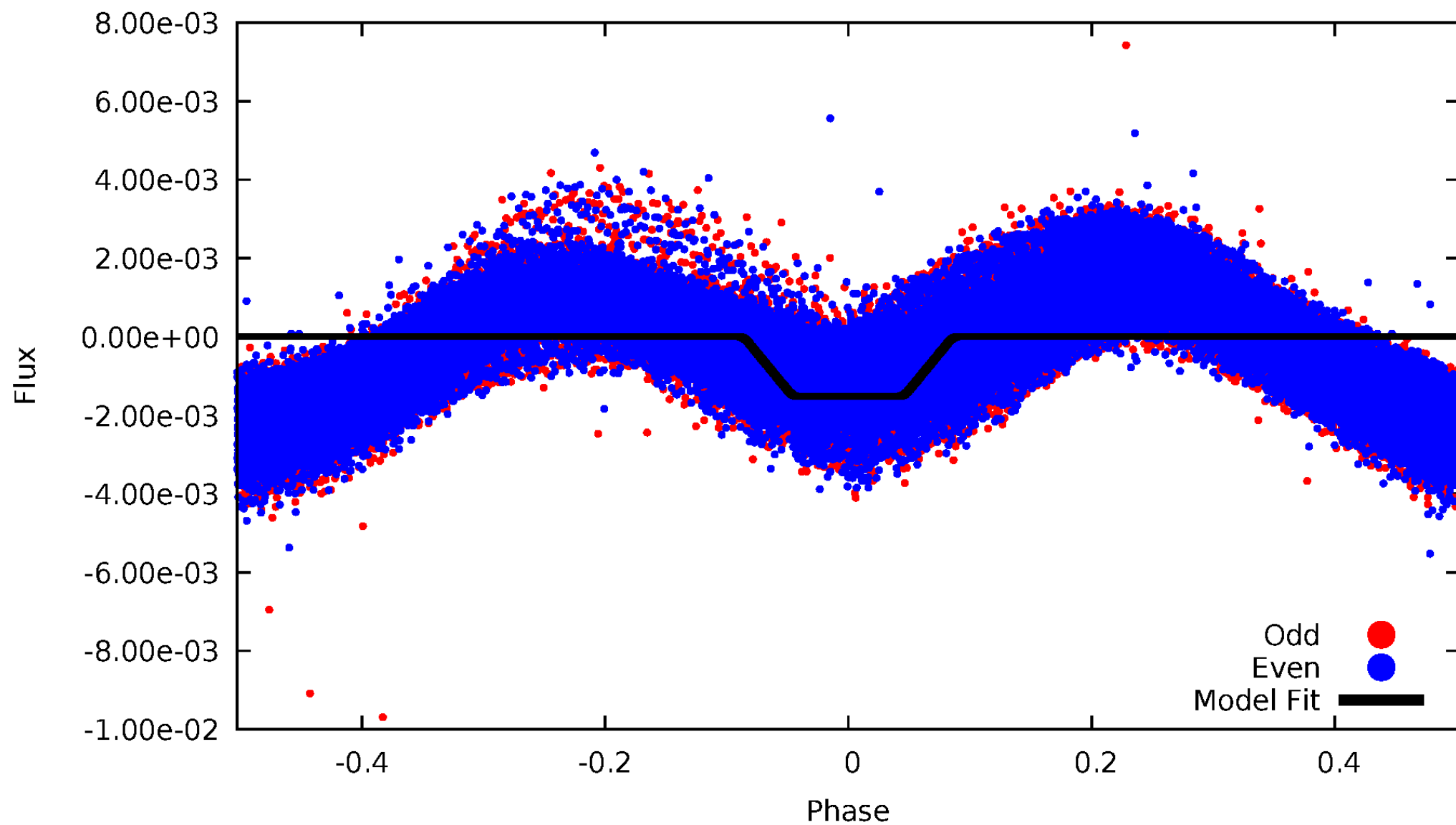
DV Odd/Even

TCE 009881909-01



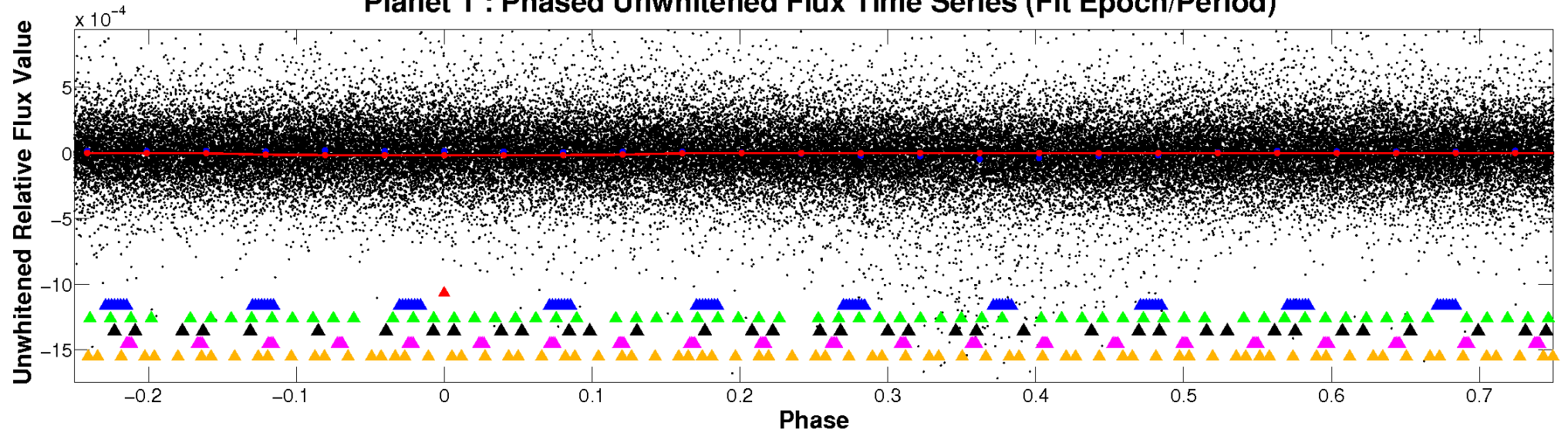
ALT Odd/Even

TCE 009881909-01

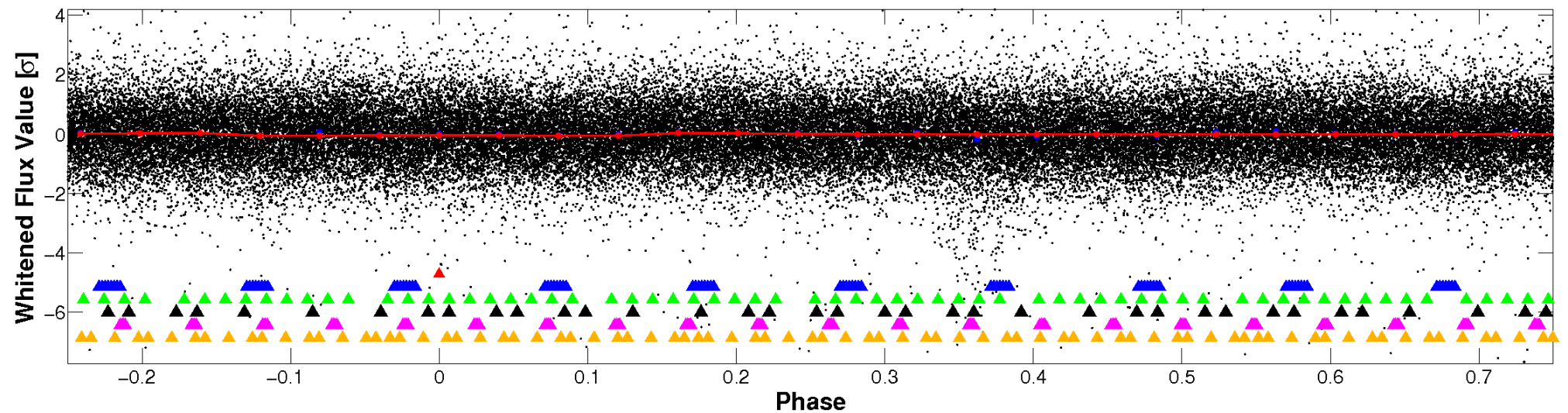


Non-Whitened Vs. Whitened Light Curve

Planet 1 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

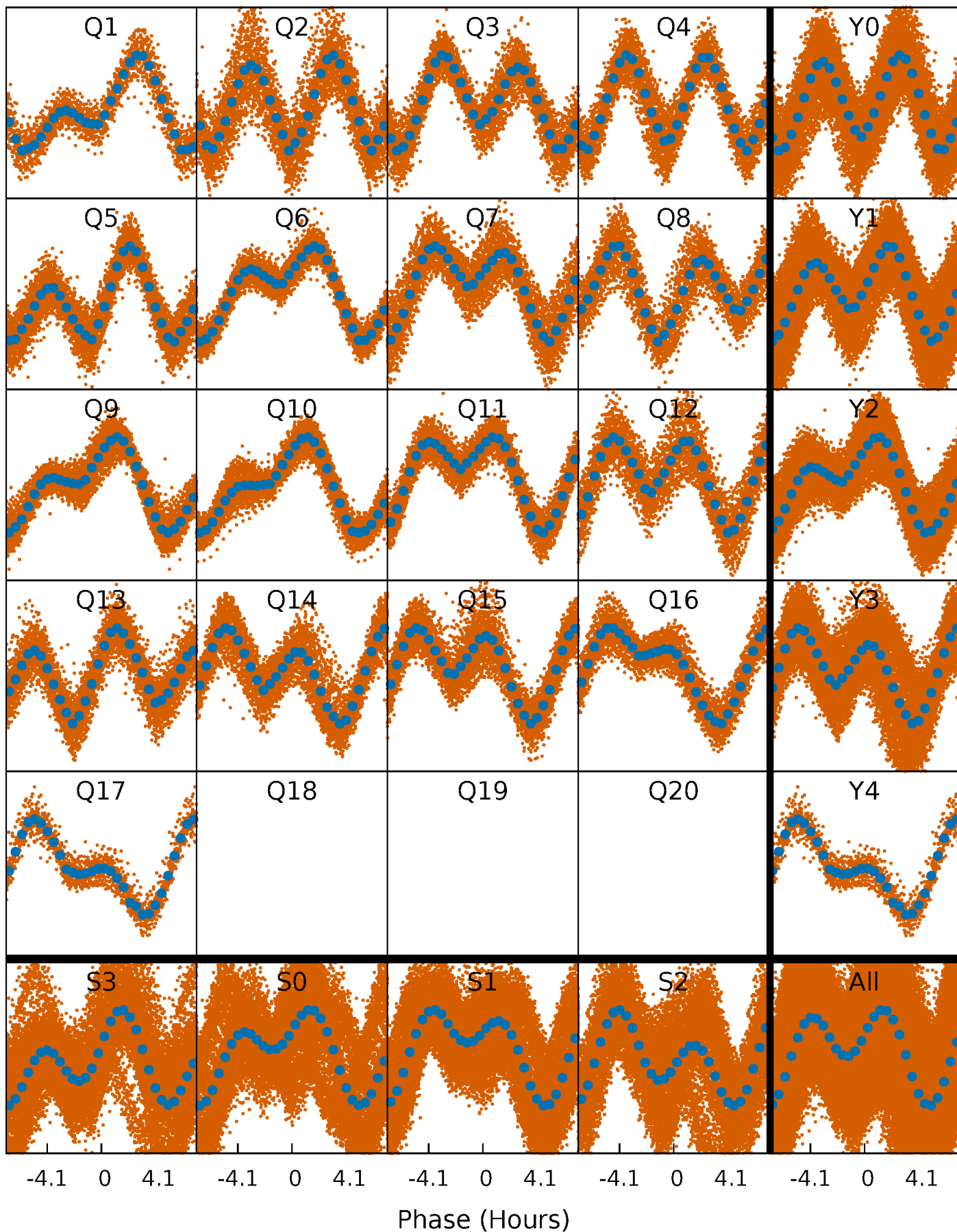


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



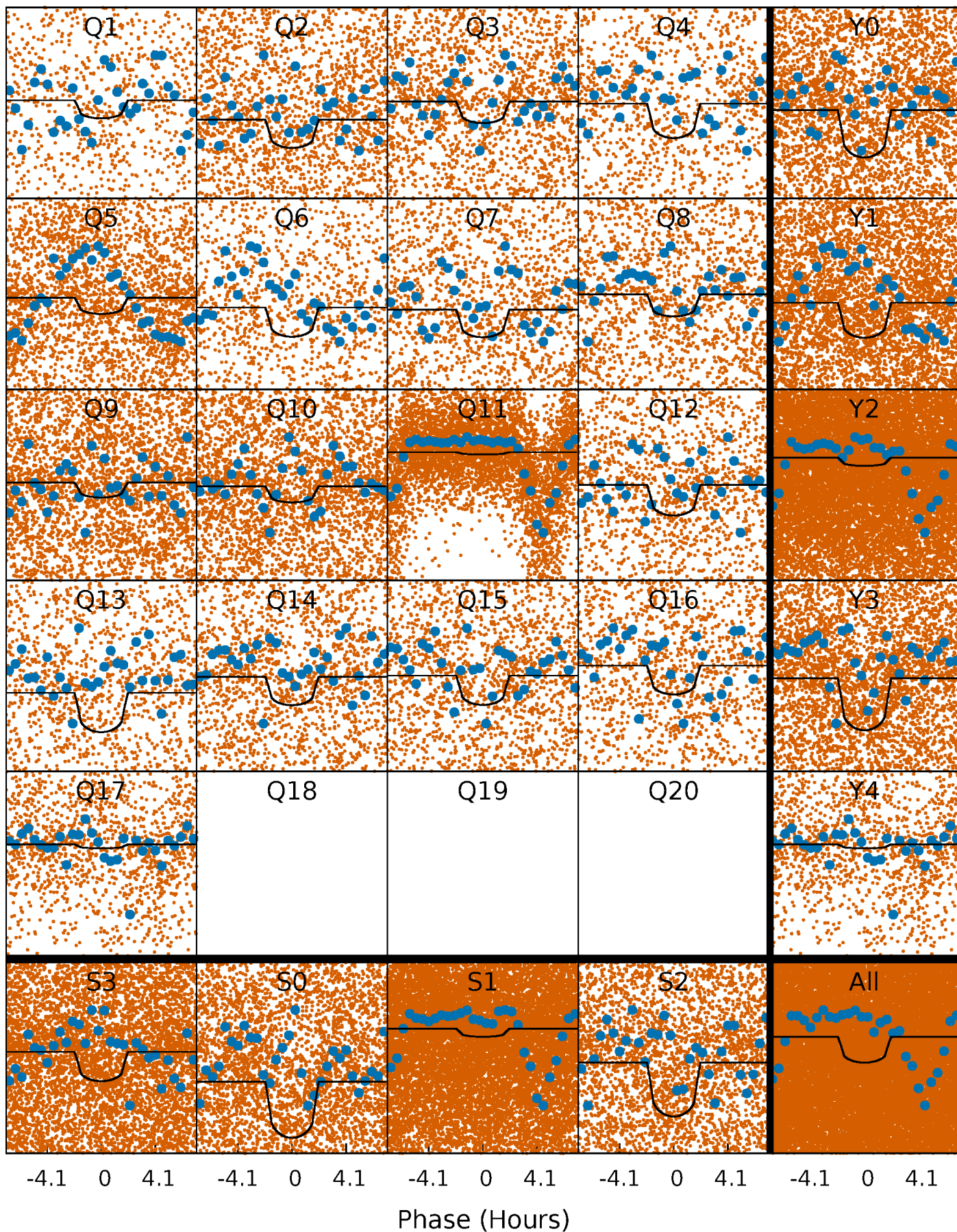
PDC Quarter-Phased Transit Curves

TCE 009881909-01 P= 0.507848 Days $T_0=131.786098$ (BKJD)



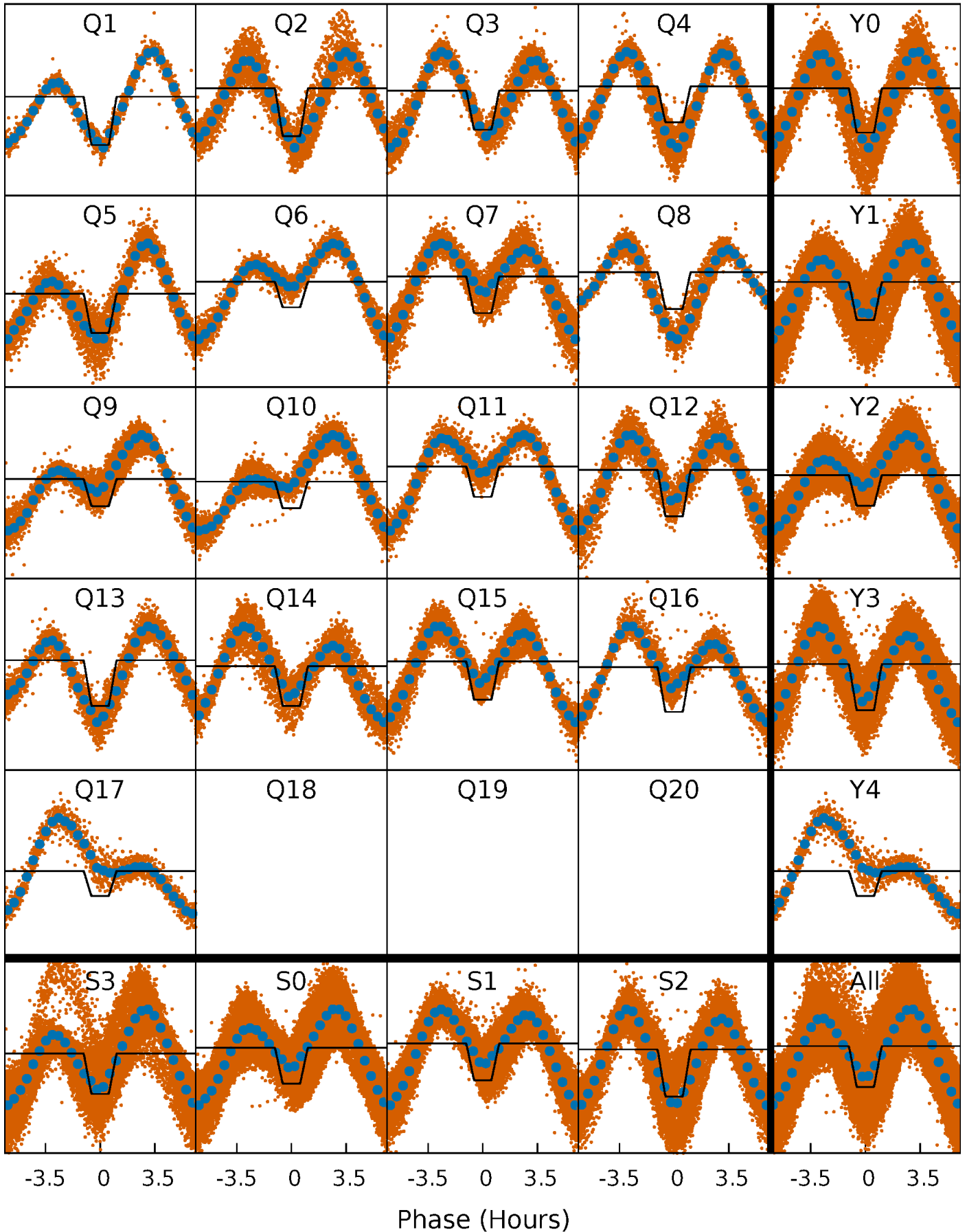
DV Quarter-Phased Transit Curves

TCE 009881909-01 P= 0.507848 Days $T_0=131.786098$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

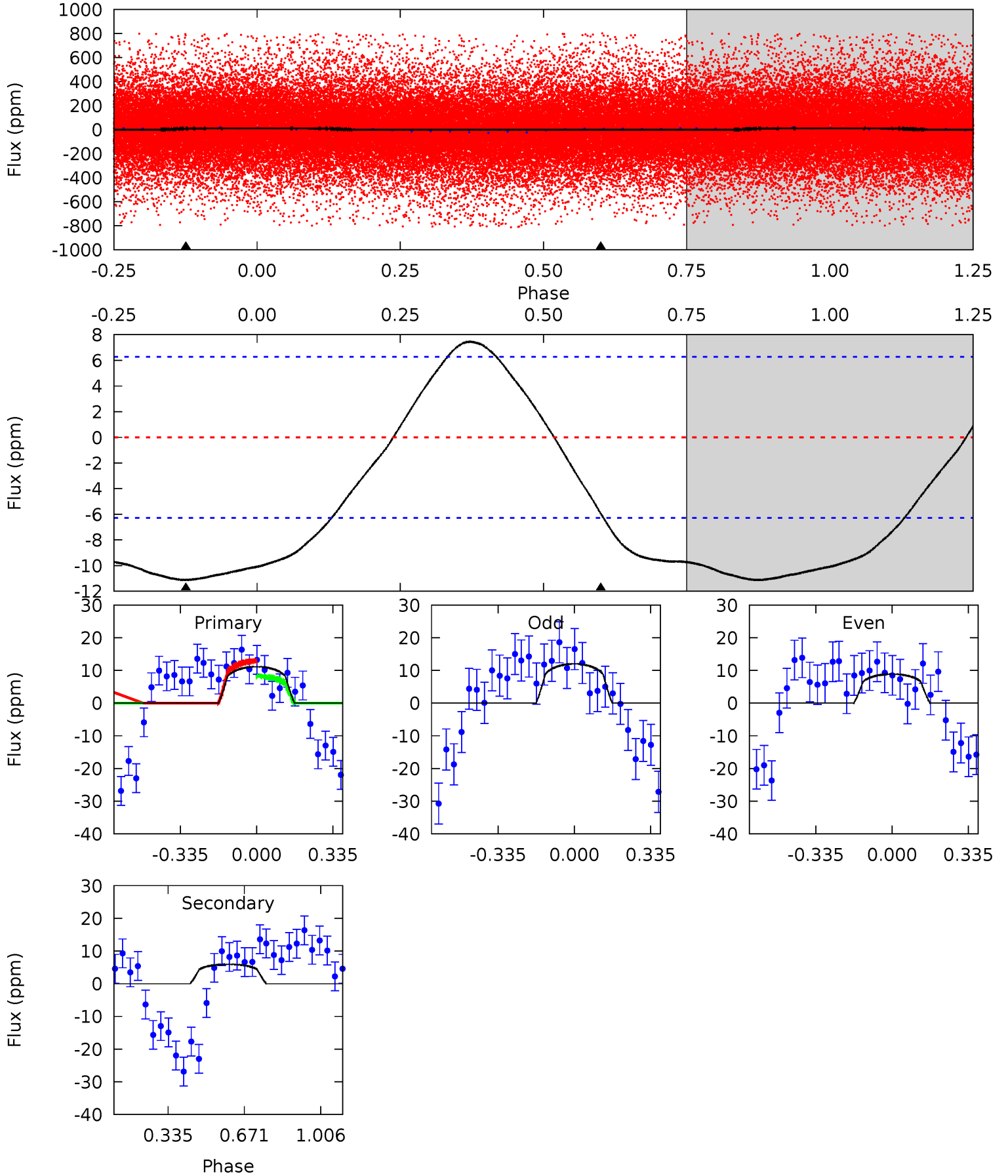
TCE 009881909-01 P= 0.507814 Days $T_0=131.777190$ (BKJD)



DV Model-Shift Uniqueness Test

009881909-01, P = 0.507848 Days, E = 131.278250 Days

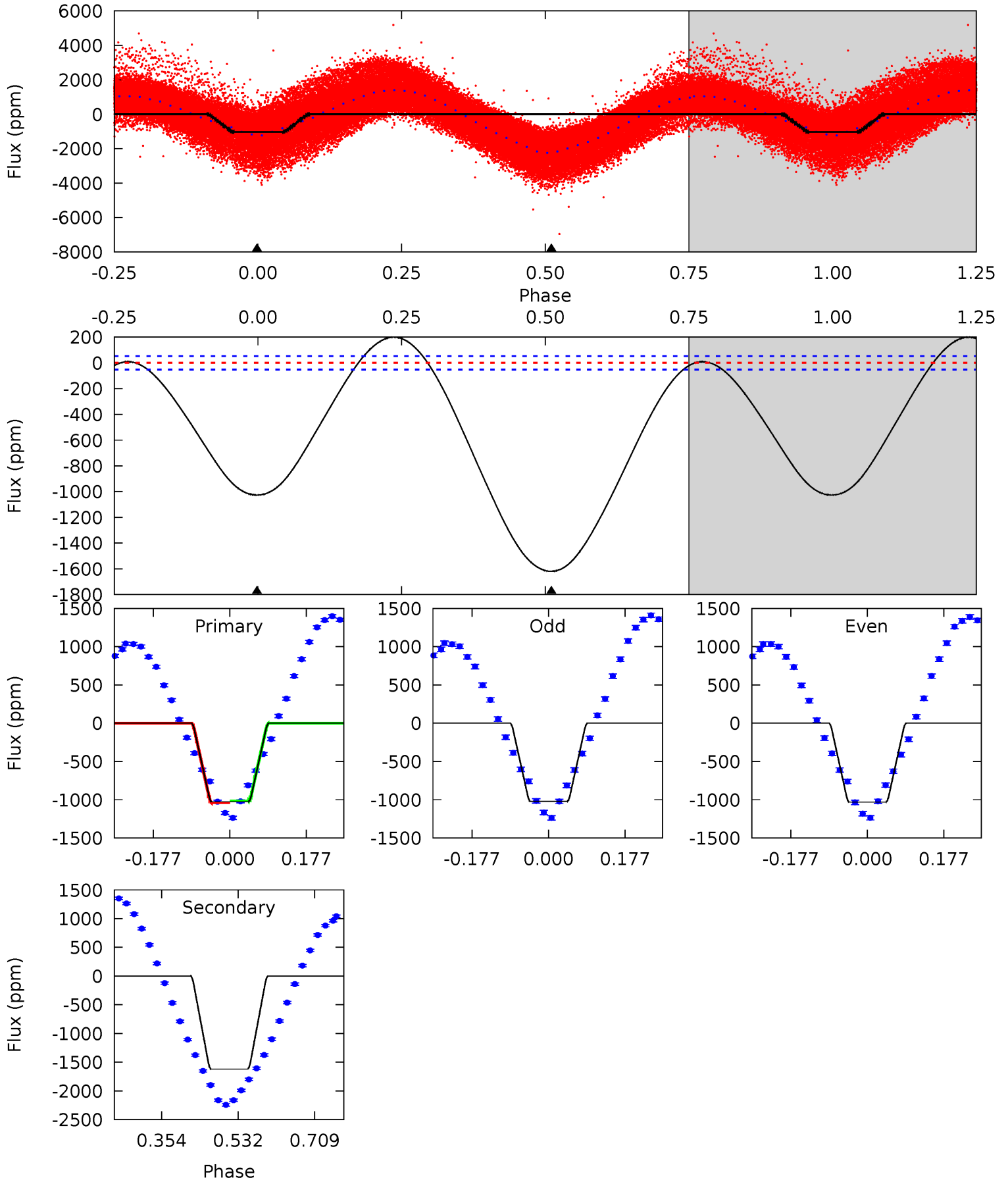
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.63	4.08	0	0	4.30	0.96	1.31	7.63	7.63	4.08	4.08	1.08	2.24	0.40	1.63



Alt Model-Shift Uniqueness Test

009881909-01, P = 0.507814 Days, E = 131.269376 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
87.3	137.7	0	0	4.44	1.35	12.3	87.3	87.3	137.7	137.7	0.37	1.10	0.11	0.93



Stellar Parameters For KIC 009881909

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7103^{+169}_{-253}	$3.837^{+0.367}_{-0.122}$	$-0.160^{+0.250}_{-0.350}$	$2.599^{+0.496}_{-1.156}$	$1.691^{+0.182}_{-0.425}$	$0.136^{+0.432}_{-0.053}$
	+2%/-4%	+10%/-3%	+156%/-219%	+19%/-44%	+11%/-25%	+319%/-39%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 009881909-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-6 ± 1	$1.06^{+0.38}_{-0.39}$	5676^{+425}_{-633}	4763^{+1427}_{-1952}	$0.630^{+0.866}_{-0.319}$
Alt.	-1620 ± 12	$10.74^{+1.45}_{-2.41}$	5694^{+392}_{-640}	6831^{+273}_{-276}	$1.709^{+0.933}_{-0.380}$

T_{max} = Theoretical Maximum Planetary Temperature
 T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)
 A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

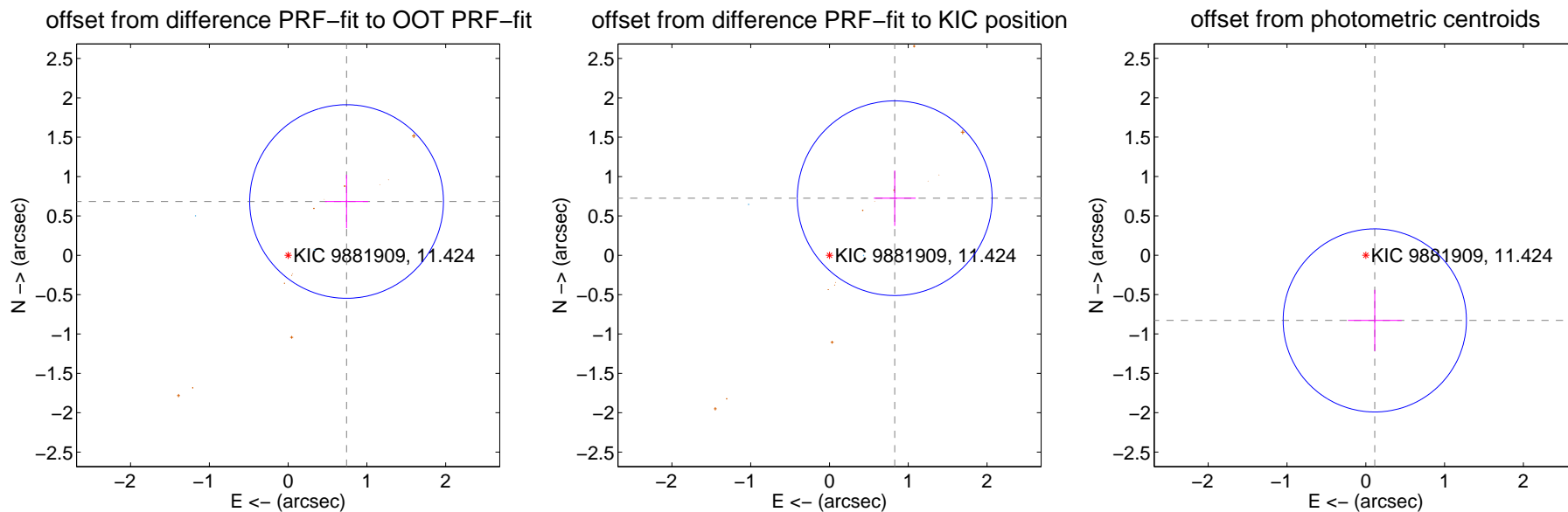
DV Centroid Data

Supplemental centroid analysis for 009881909-01. **Kepler magnitude: 11.42.** Transit SNR 7.86

There are 4 quarters with good PRF difference image offsets

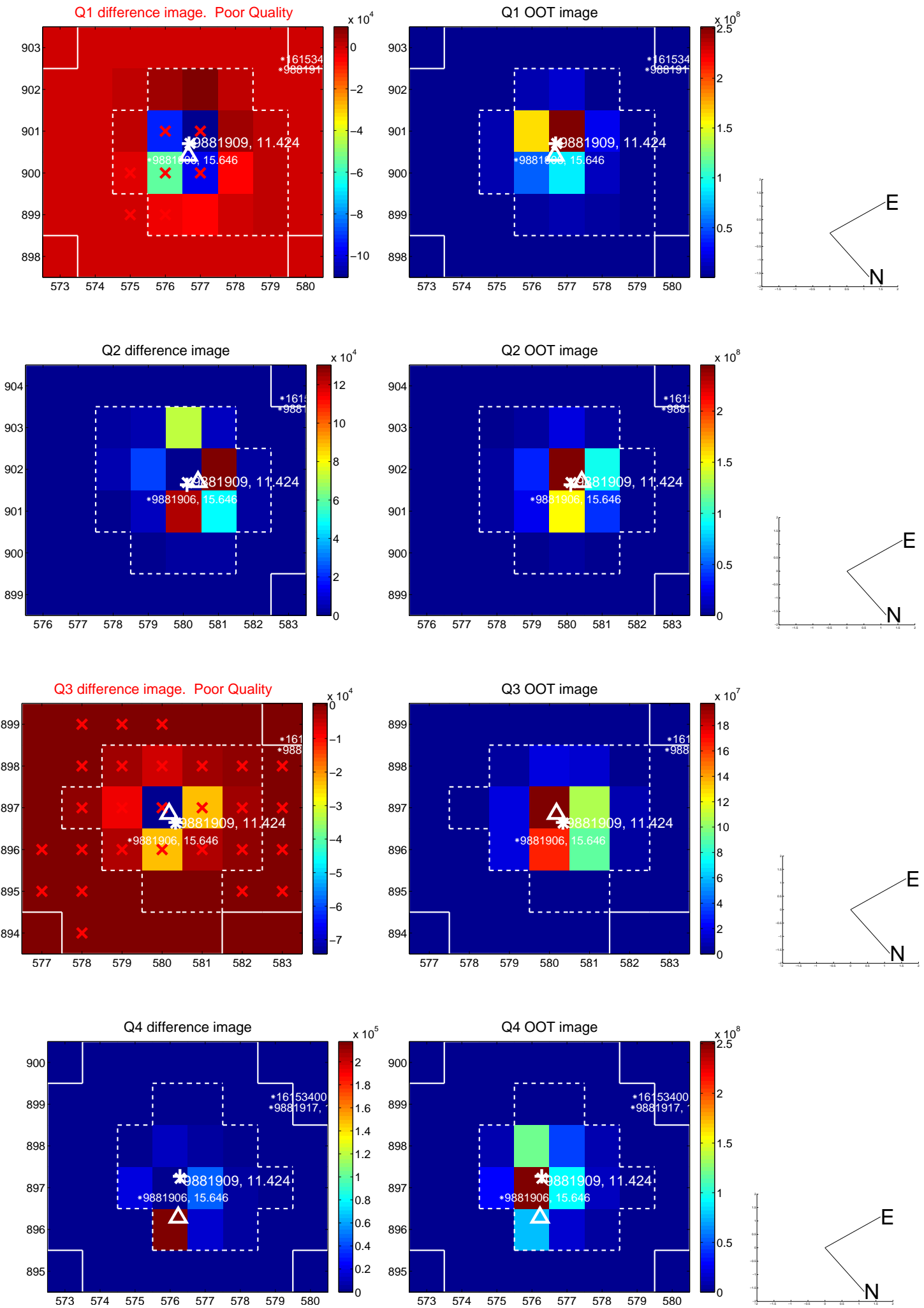
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.008 ± 0.410	2.46	-0.742 ± 0.274	0.683 ± 0.340
PRF-fit source offset from KIC position	1.100 ± 0.412	2.67	-0.828 ± 0.265	0.725 ± 0.352
photometric centroid source offset	0.84 ± 0.39	2.16	-0.11 ± 0.34	-0.83 ± 0.39

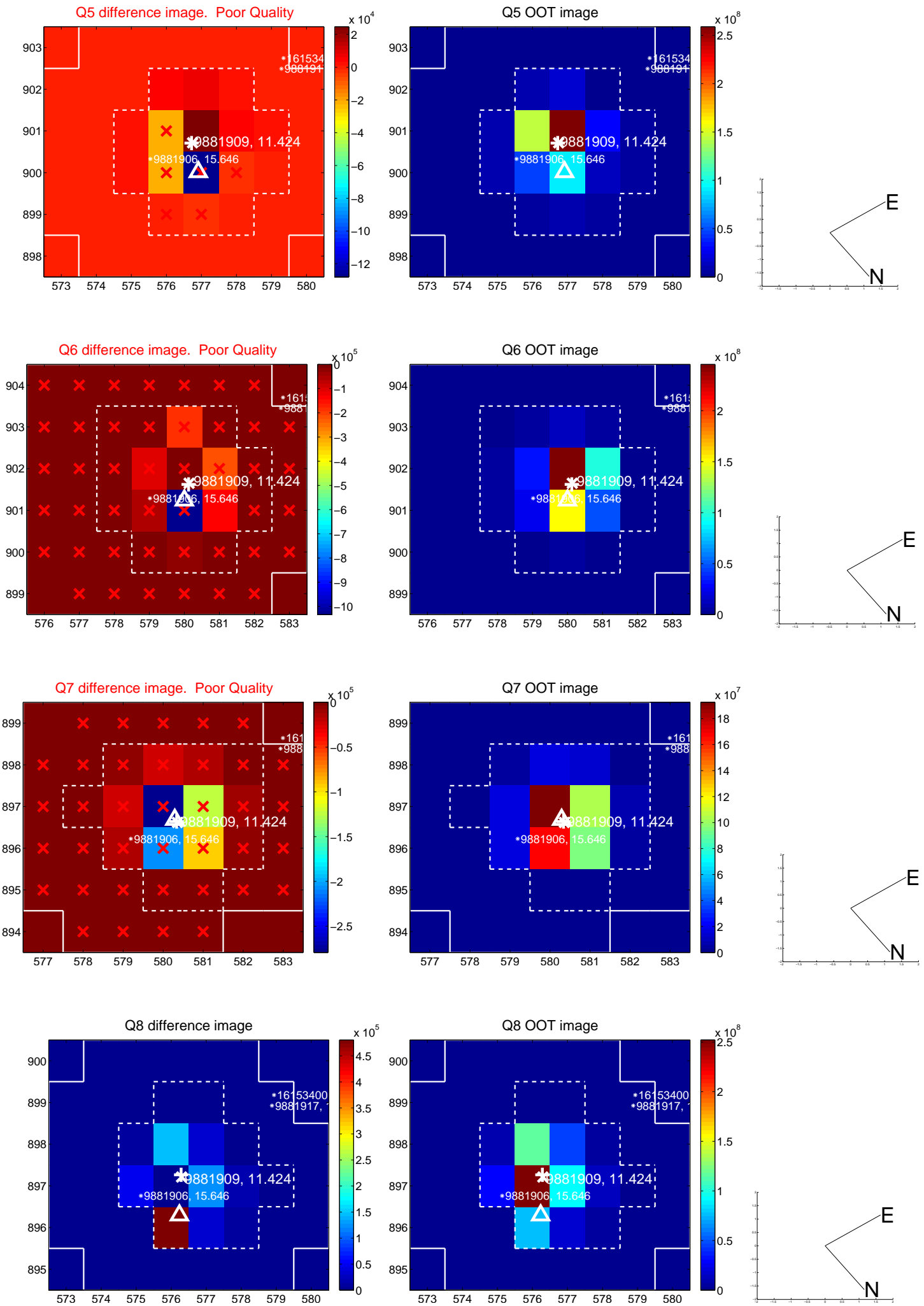


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

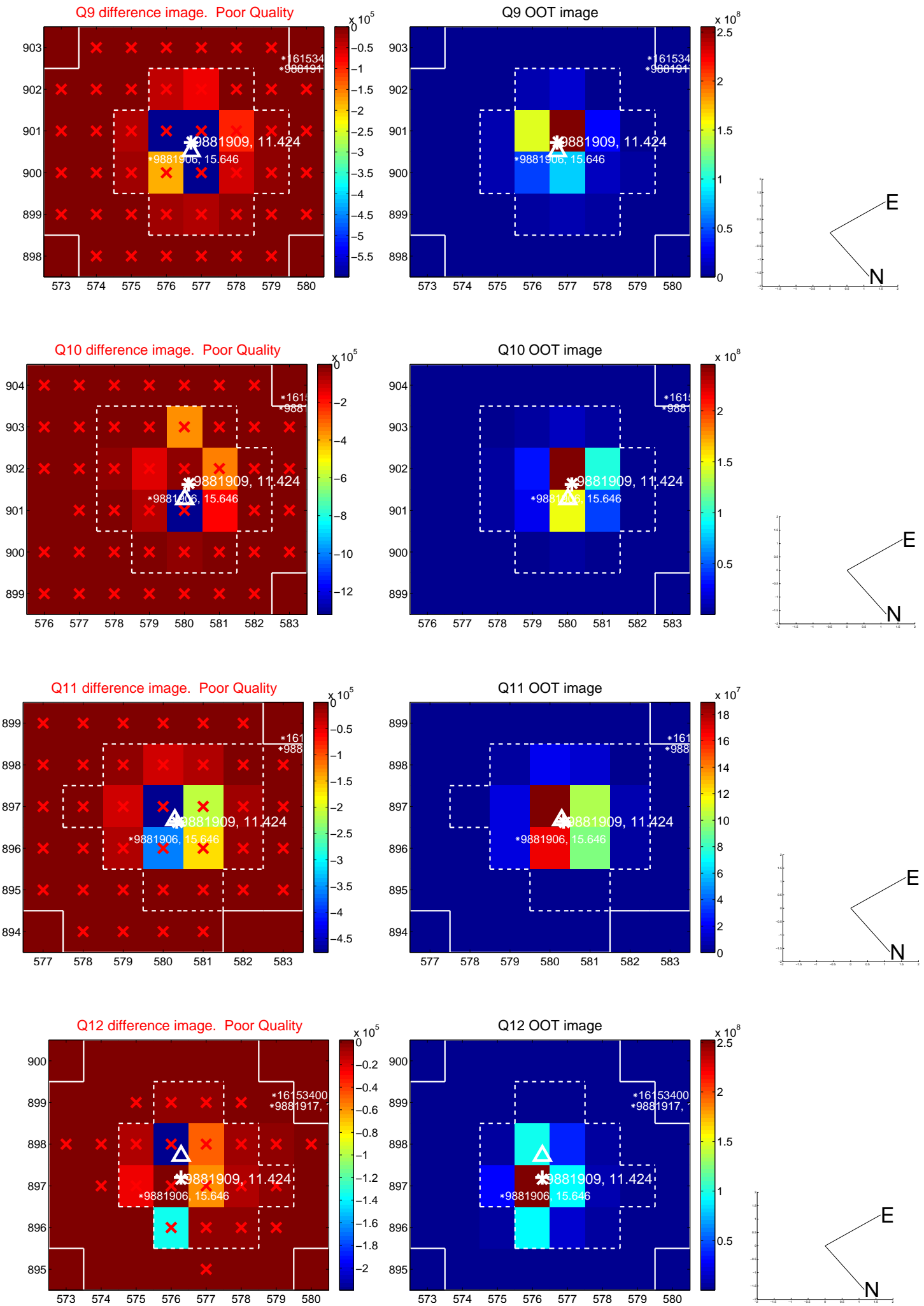
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



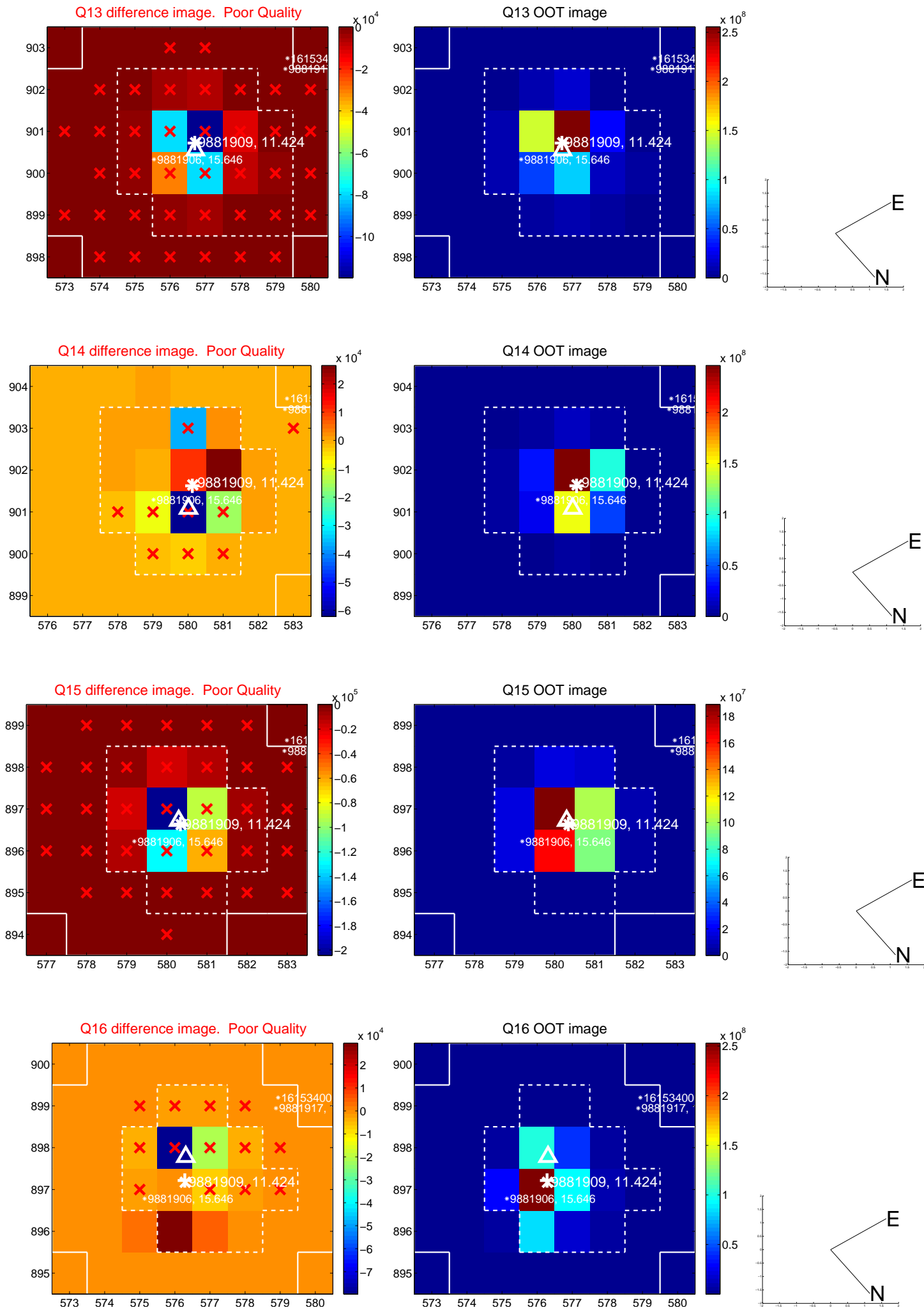
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



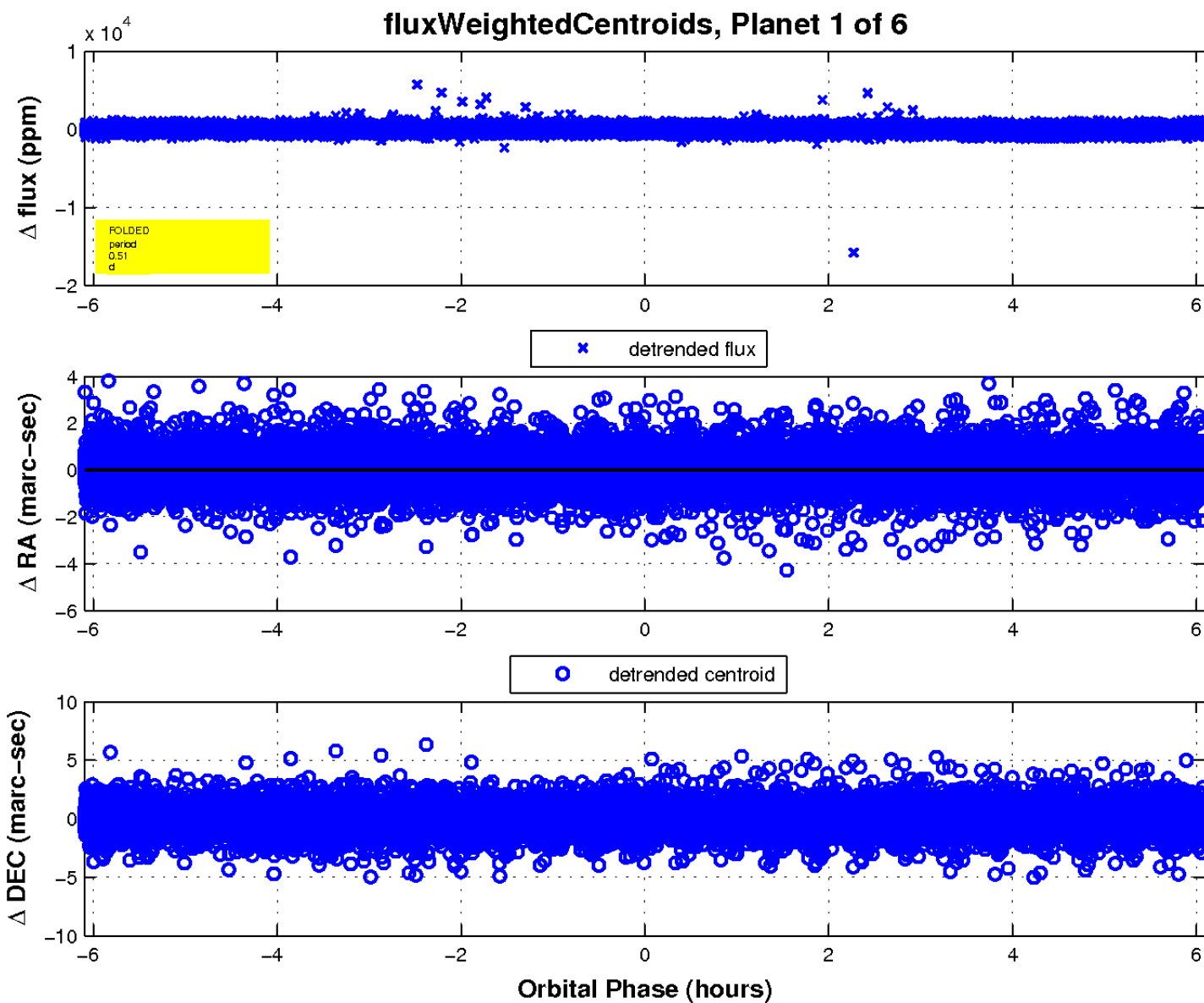
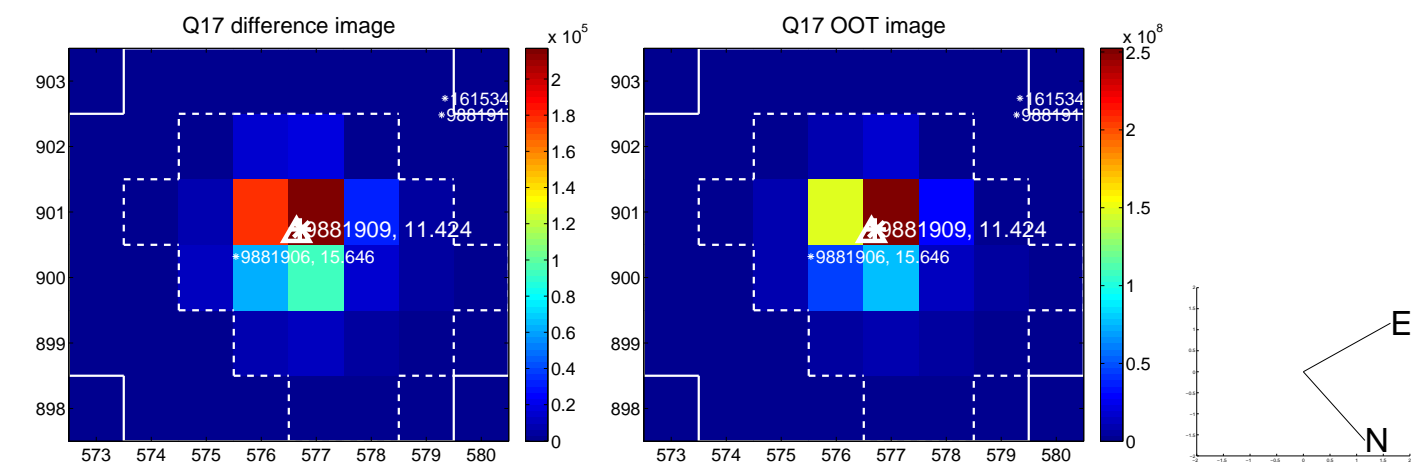
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

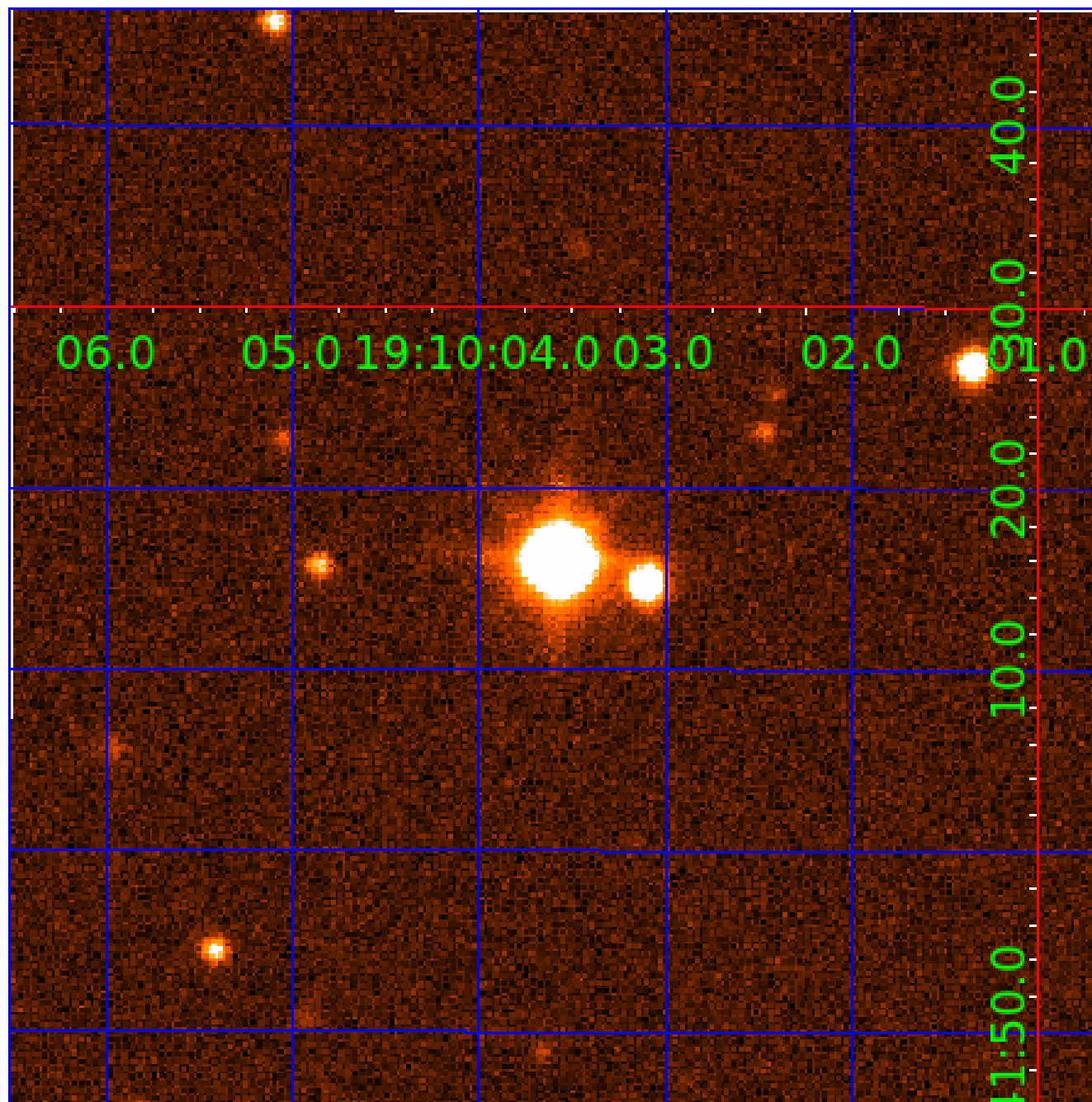


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009881909

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
009881909-01	OBS	No	0.507848	131.786098	17.8	3.619	10.6	7.9	2.60	7103	1.13	69858.79
009881909-02	OBS	No	18.637909	149.096319	107.3	1.632	10.5	2.9	2.60	7103	3.15	572.80
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009881909-05	OBS	No	17.363529	139.852949	188.7	2.437	9.6	6.1	2.60	7103	3.85	629.53
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009881909-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
009881909-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
009881909-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—CENT_SATURATED
009881909-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_SATURATED
009881909-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

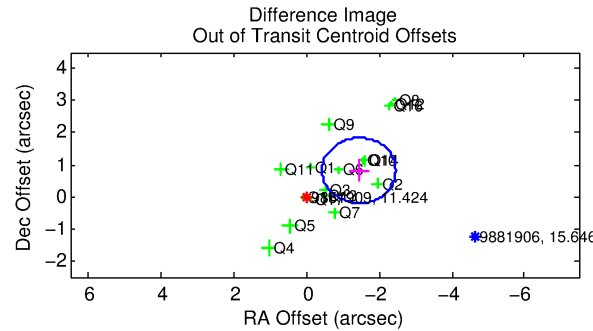
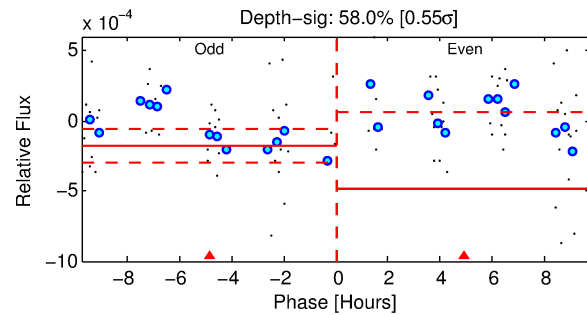
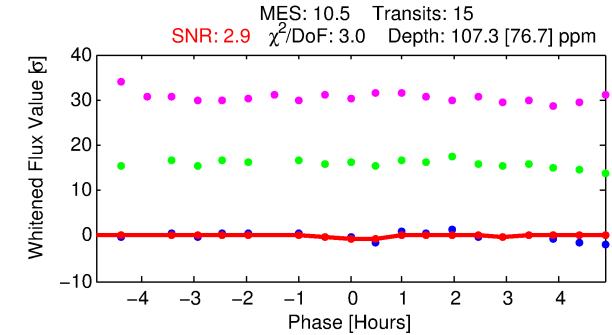
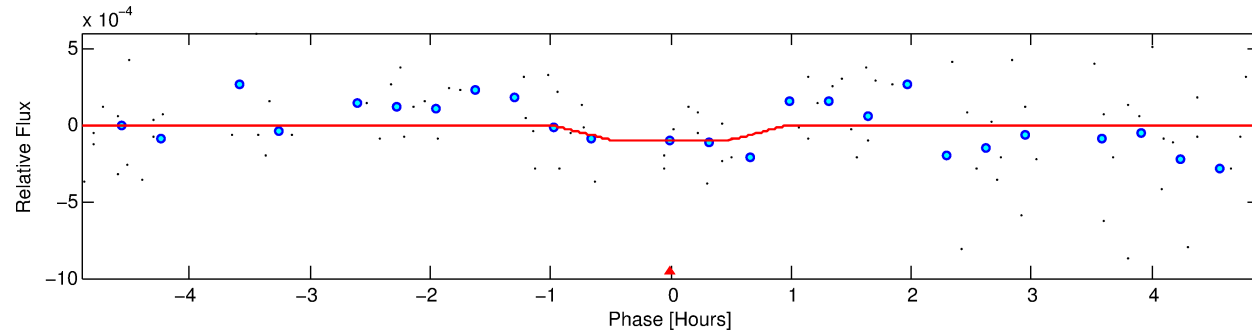
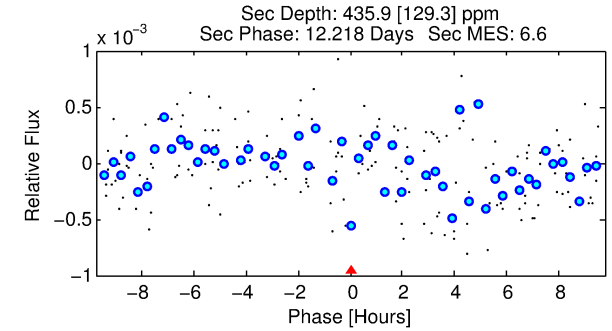
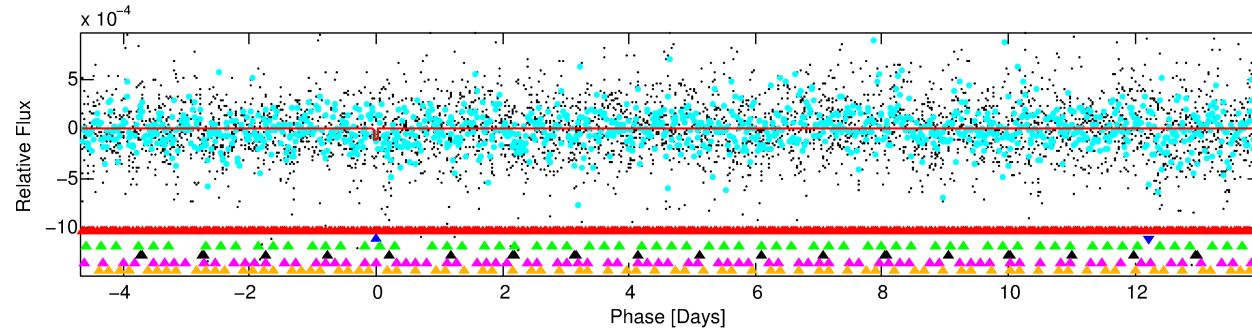
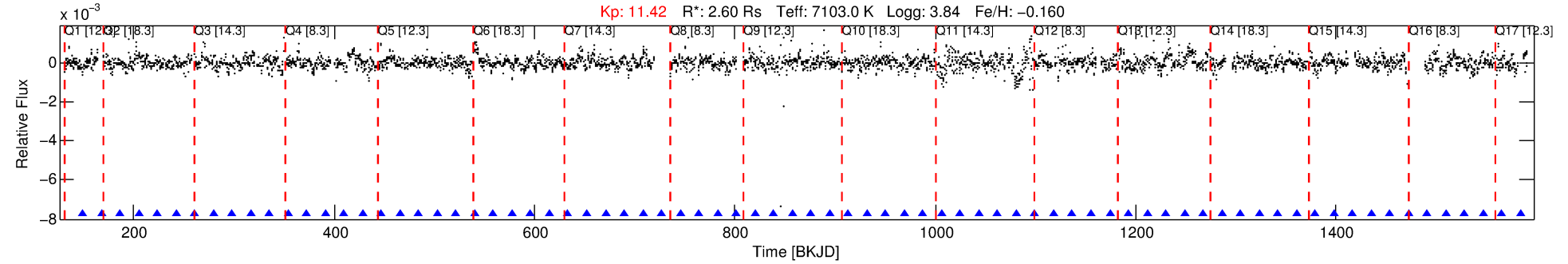
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009881909-02

No Significant Match Found

DV One-Page Summary

KIC: 9881909 Candidate: 2 of 6 Period: 18.638 d



DV Fit Results:

Period = 18.63791 [0.00078] d
Epoch = 149.0963 [0.0474] BKJD
Rp/R* = 0.0111 [0.0345]
a/R* = 39.97 [726.75]
b = 0.90 [3.80]
Seff = 572.80 [373.69]
Teq = 1247 [203] K
Rp = 3.15 [9.89] Re
a = 0.1640 [0.0671] AU
Ag = 648.50 [4050.24] [0.16 σ]
Teffp = 9733 [15122] K [0.56 σ]

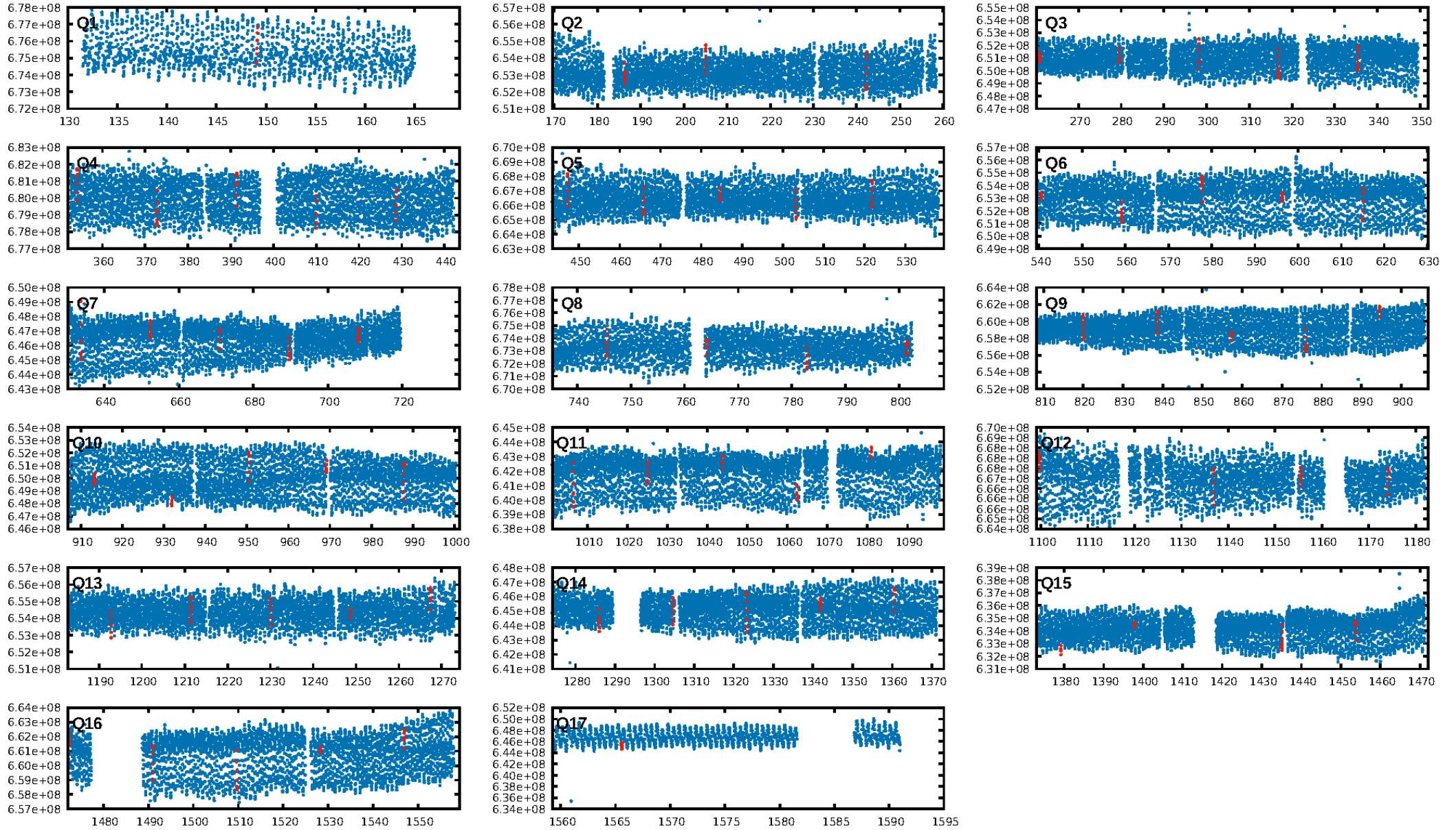
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [4.05 σ]
LongPeriod-sig: 100.0% [42.61 σ]
ModelChiSquare2-sig: 0.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.08e-10
RollingBand-fgt: 1.00 [15/15]
GhostDiagnostic-chr: -3.528
Centroid-sig: N/A
Centroid-so: 0.693 arcsec [1.39 σ]
OotOffset-rm: 1.658 arcsec [4.89 σ]
KicOffset-rm: 2.091 arcsec [5.32 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.41 [7/17]
DiffImageOverlap-fno: 0.00 [0/17]

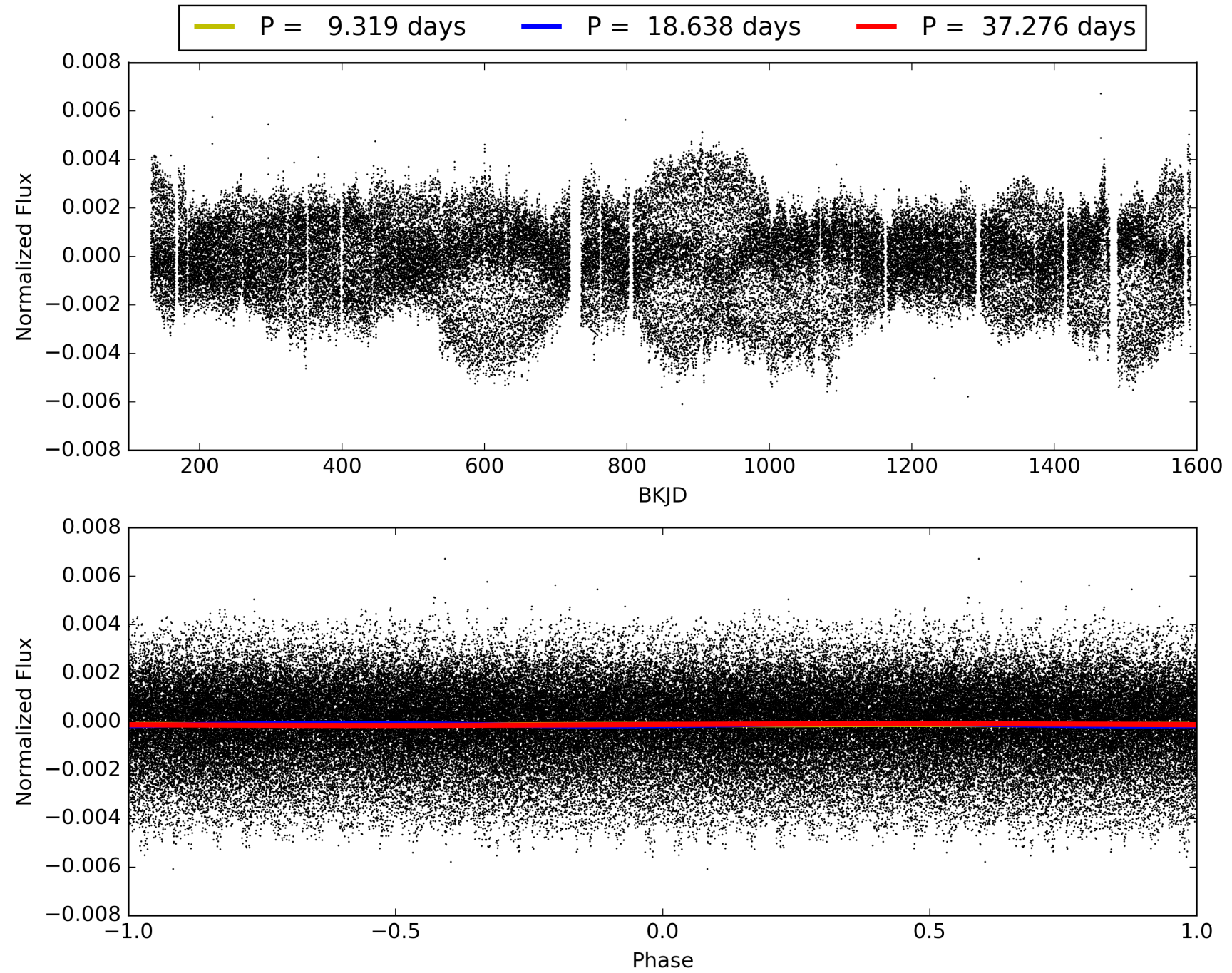
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:23:40 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009881909-02, PDC Light Curves

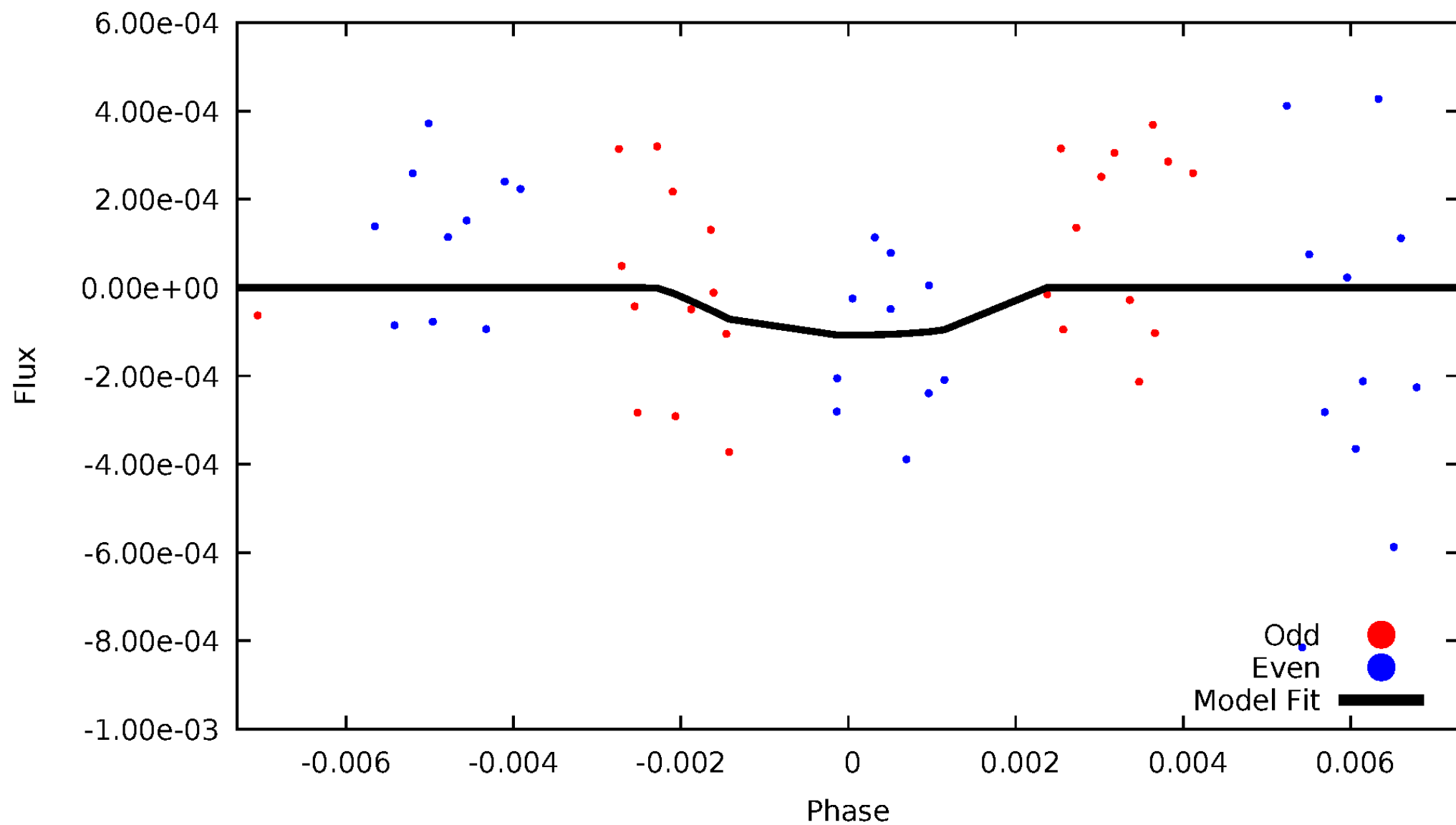


TCE 009881909-02



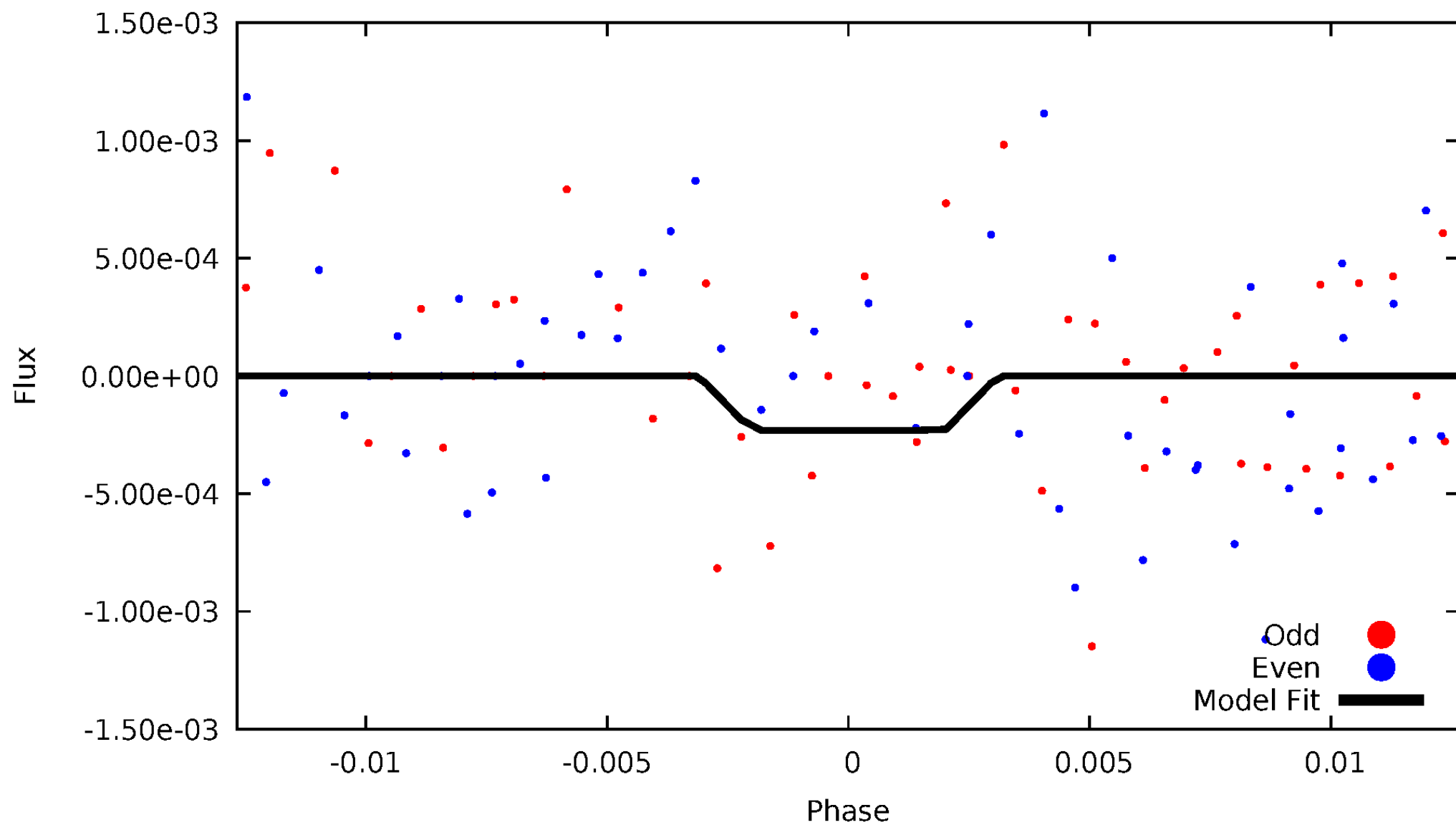
DV Odd/Even

TCE 009881909-02



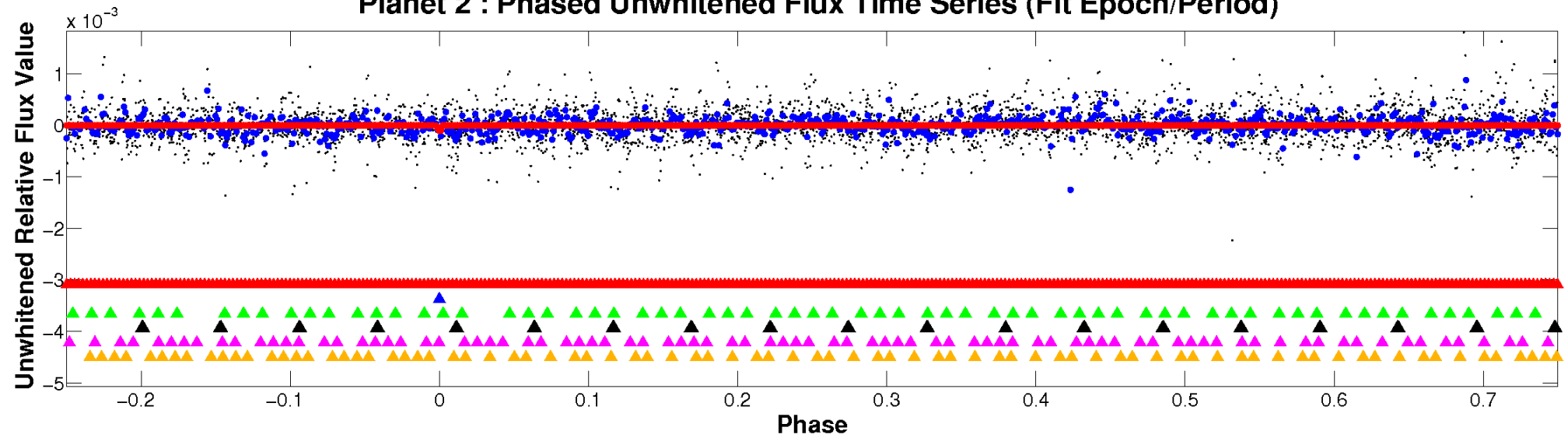
ALT Odd/Even

TCE 009881909-02

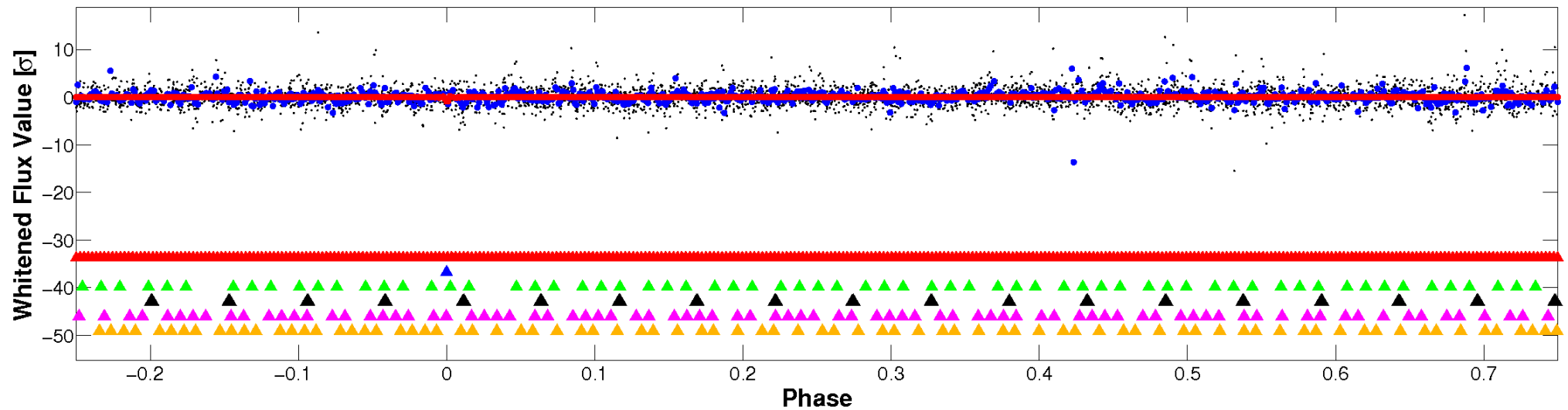


Non-Whitened Vs. Whitened Light Curve

Planet 2 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

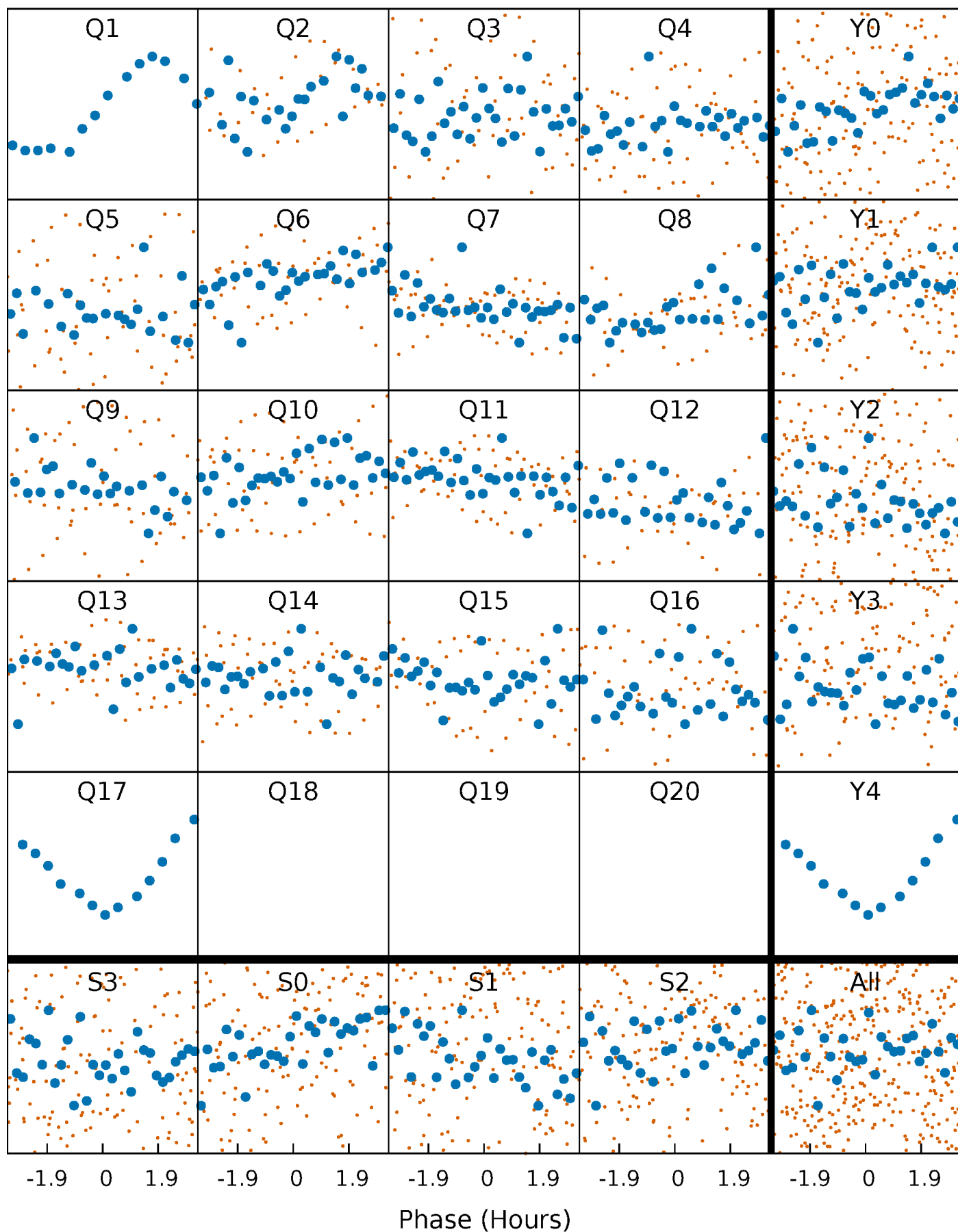


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



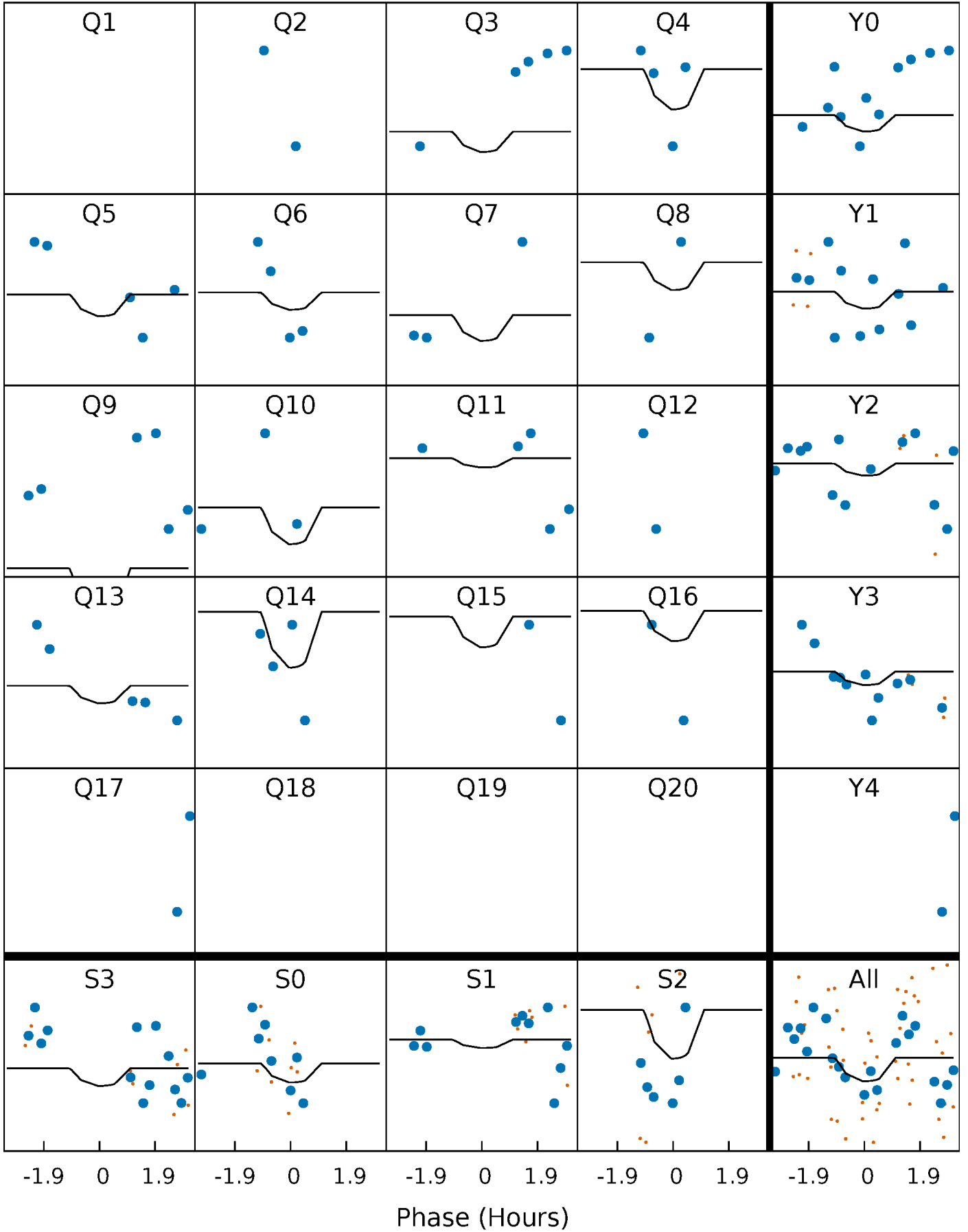
PDC Quarter-Phased Transit Curves

TCE 009881909-02 $P = 18.637909$ Days $T_0 = 149.096319$ (BKJD)



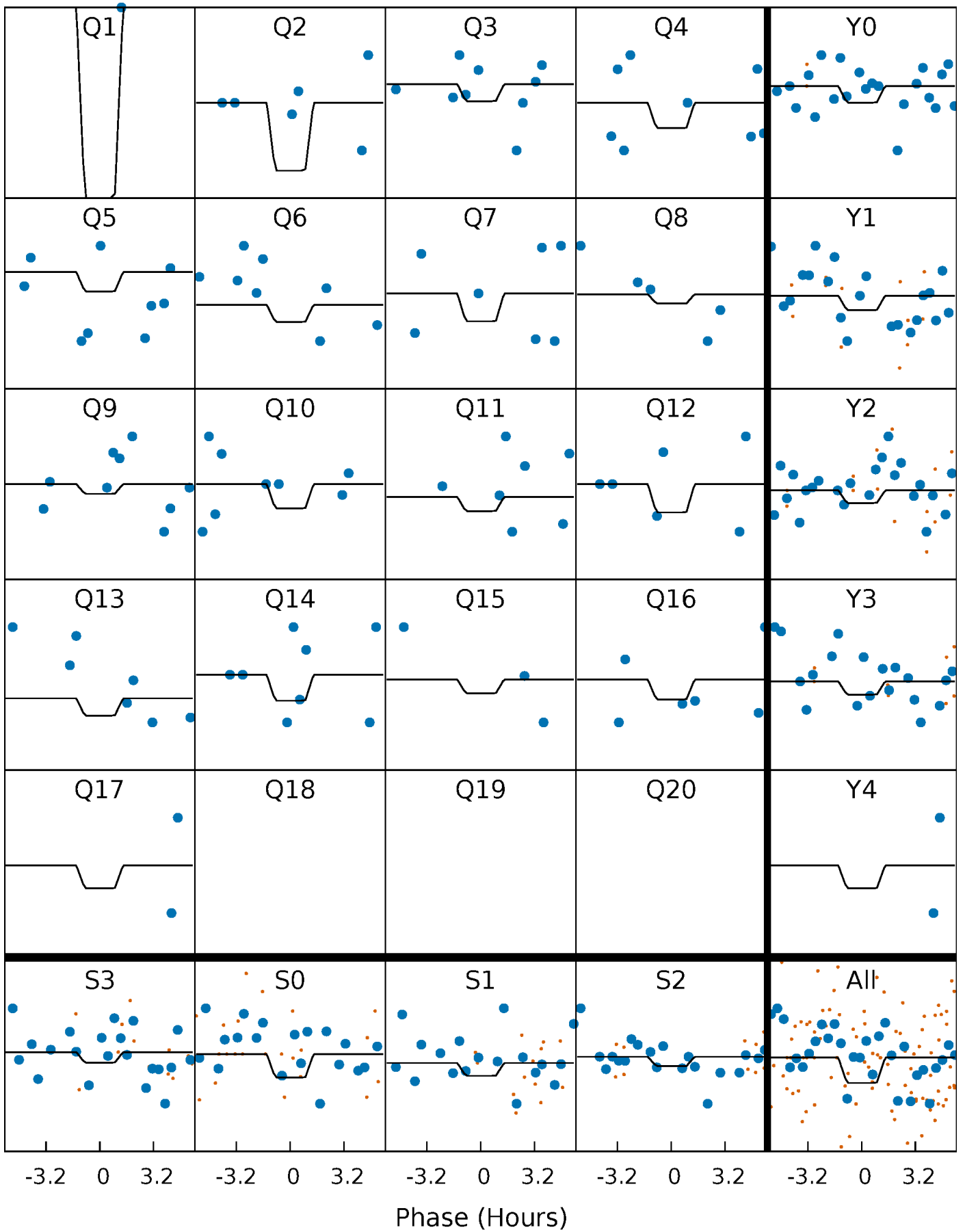
DV Quarter-Phased Transit Curves

TCE 009881909-02 P= 18.637909 Days $T_0=149.096319$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

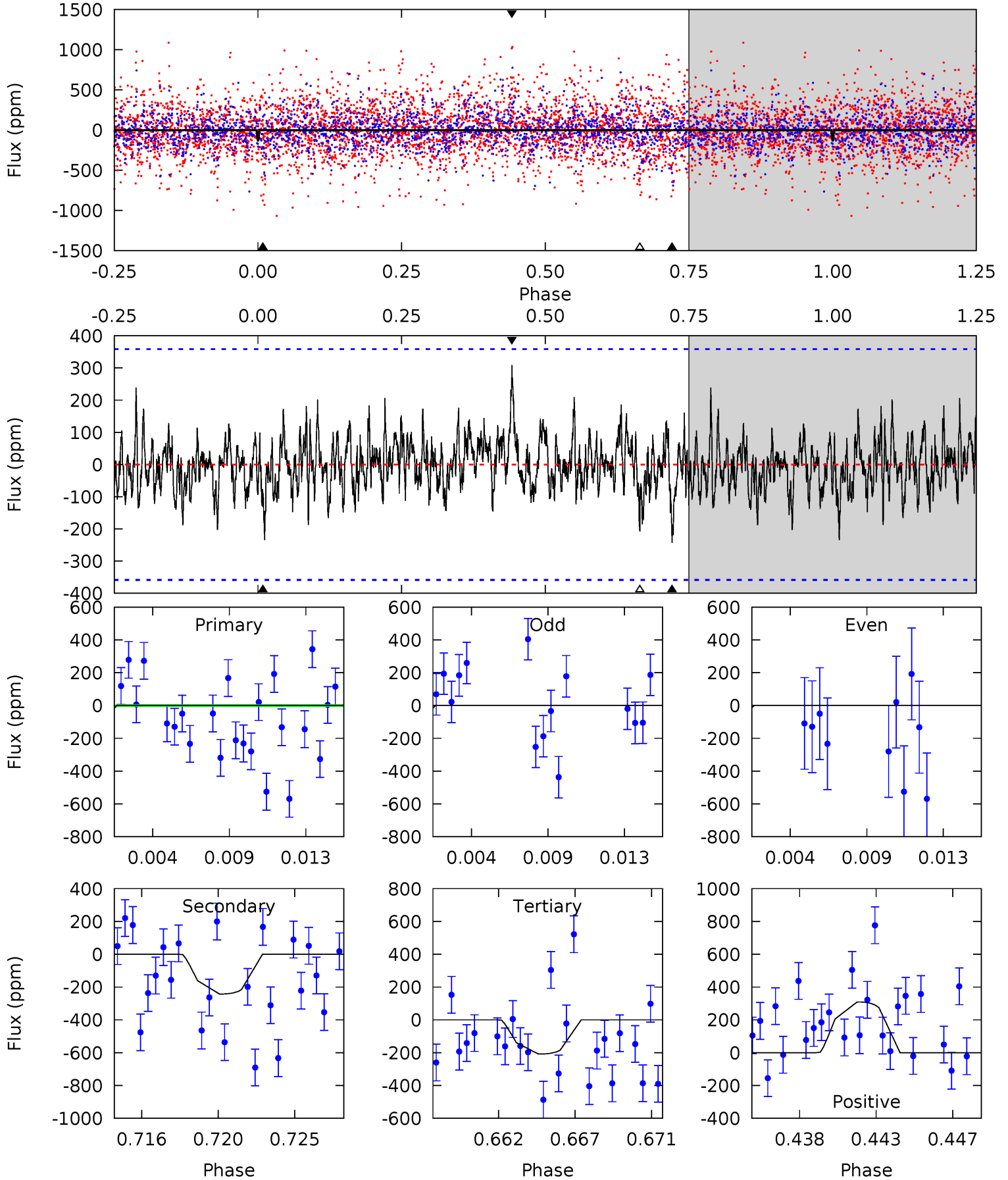
TCE 009881909-02 P= 18.635118 Days $T_0=149.244256$ (BKJD)



DV Model-Shift Uniqueness Test

009881909-02, P = 18.637909 Days, E = 130.458410 Days

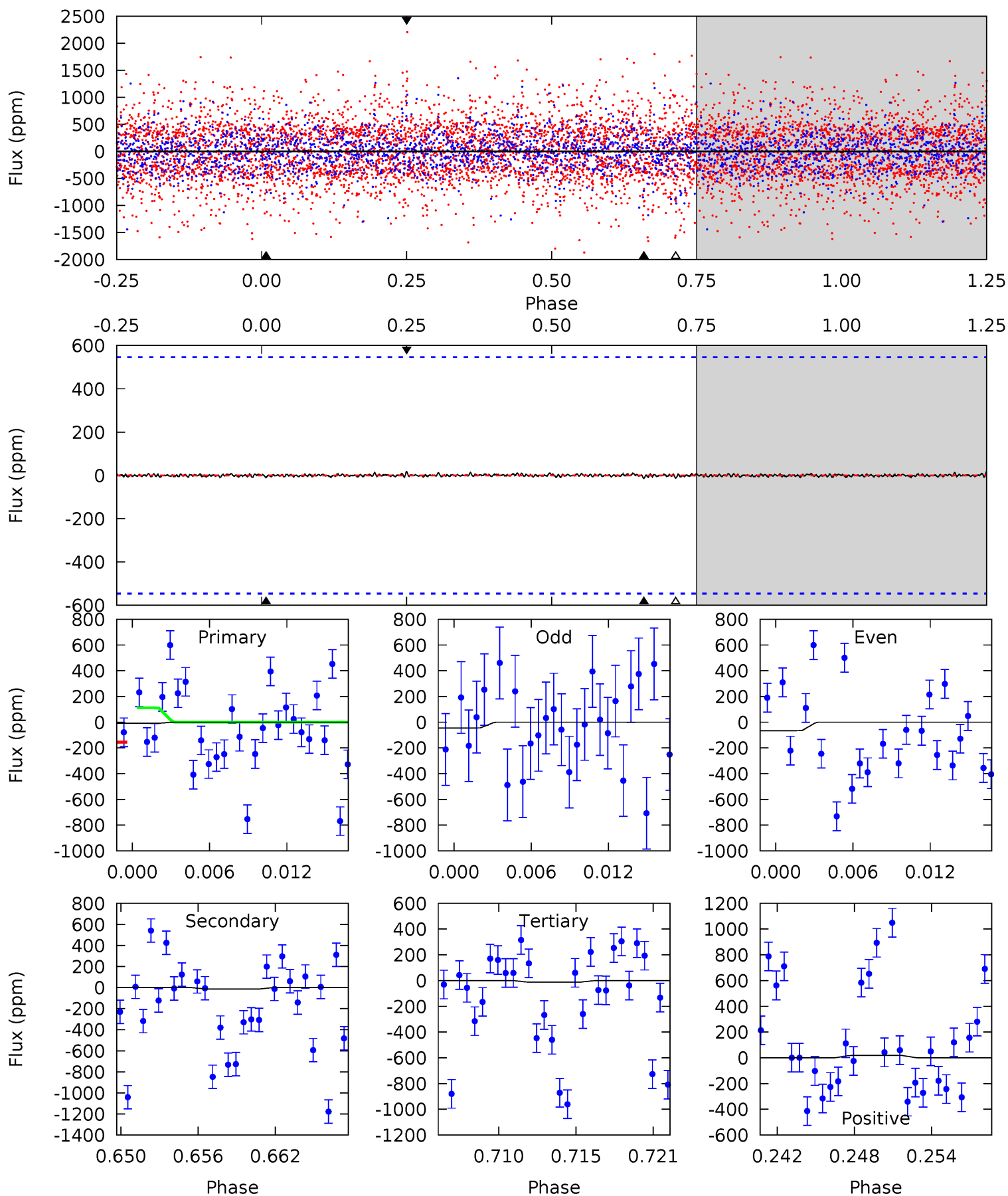
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.91	3.50	3.01	4.46	5.18	2.84	1.02	-1.09	-2.55	0.50	-0.96	0.07	1.40	0.56	0.98



Alt Model-Shift Uniqueness Test

009881909-02, P = 18.635118 Days, E = 130.609138 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.08	0.13	0.12	0.17	5.13	2.75	0.04	-0.04	-0.09	0.02	-0.04	0.09	0	0.56	0.20



Stellar Parameters For KIC 009881909

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	ρ_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7103^{+169}_{-253}	$3.837^{+0.367}_{-0.122}$	$-0.160^{+0.250}_{-0.350}$	$2.599^{+0.496}_{-1.156}$	$1.691^{+0.182}_{-0.425}$	$0.136^{+0.432}_{-0.053}$
	+2%/-4%	+10%/-3%	+156%/-219%	+19%/-44%	+11%/-25%	+319%/-39%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 009881909-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-243 ± 69	$7.33^{+7.61}_{-5.19}$	1696^{+128}_{-159}	5260^{+5346}_{-1318}	64^{+712}_{-50}
Alt.	-14 ± 107	$7.74^{+7.65}_{-5.36}$	1703^{+127}_{-195}	2941^{+2340}_{-7436}	$2.757^{+70.236}_{-29.392}$

T_{max} = Theoretical Maximum Planetary Temperature
 T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)
 A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

DV Centroid Data

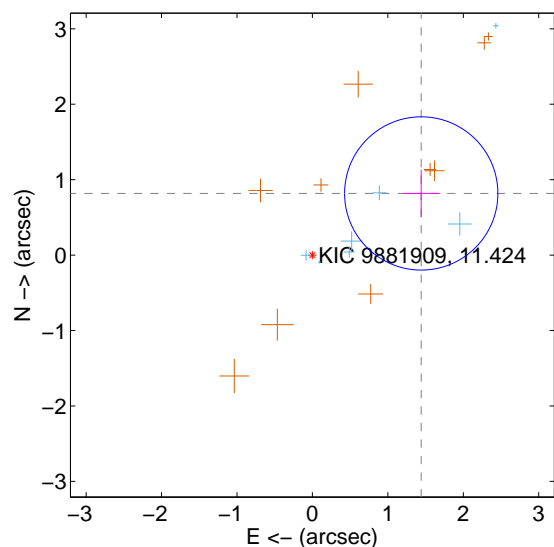
Supplemental centroid analysis for 009881909-02. **Kepler magnitude: 11.42**. Transit SNR 2.94

There are 7 quarters with good PRF difference image offsets

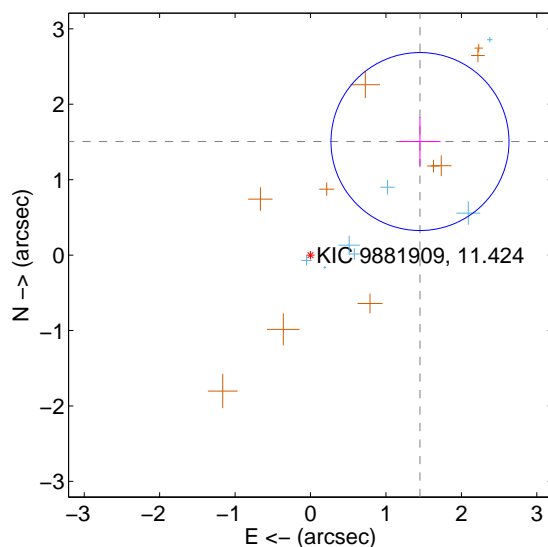
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.658 ± 0.339	4.89	-1.442 ± 0.246	0.817 ± 0.315
PRF-fit source offset from KIC position	2.091 ± 0.393	5.32	-1.451 ± 0.271	1.505 ± 0.325
photometric centroid source offset	0.69 ± 0.50	1.39	-0.69 ± 0.50	0.08 ± 0.54

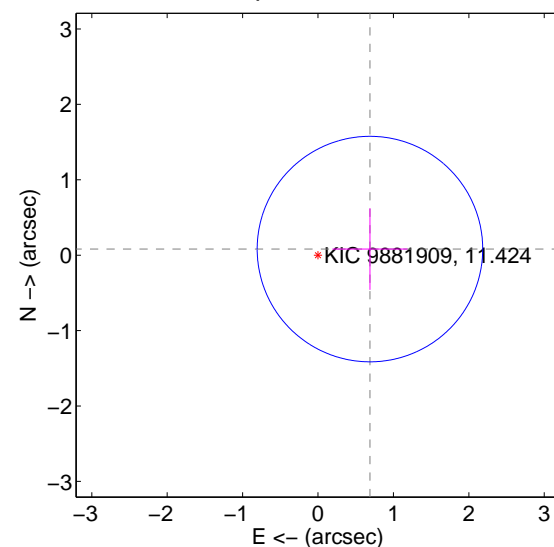
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

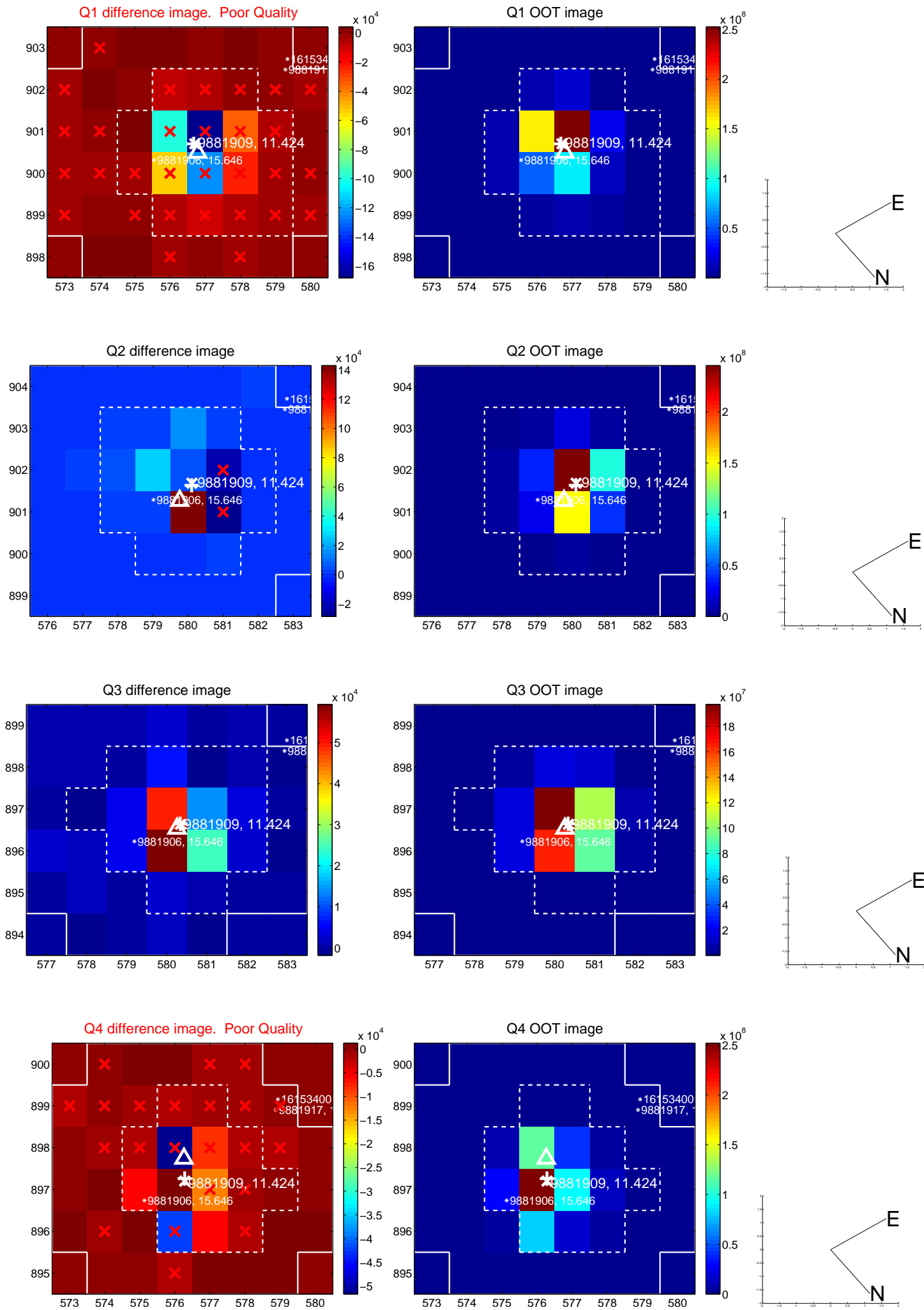


offset from photometric centroids

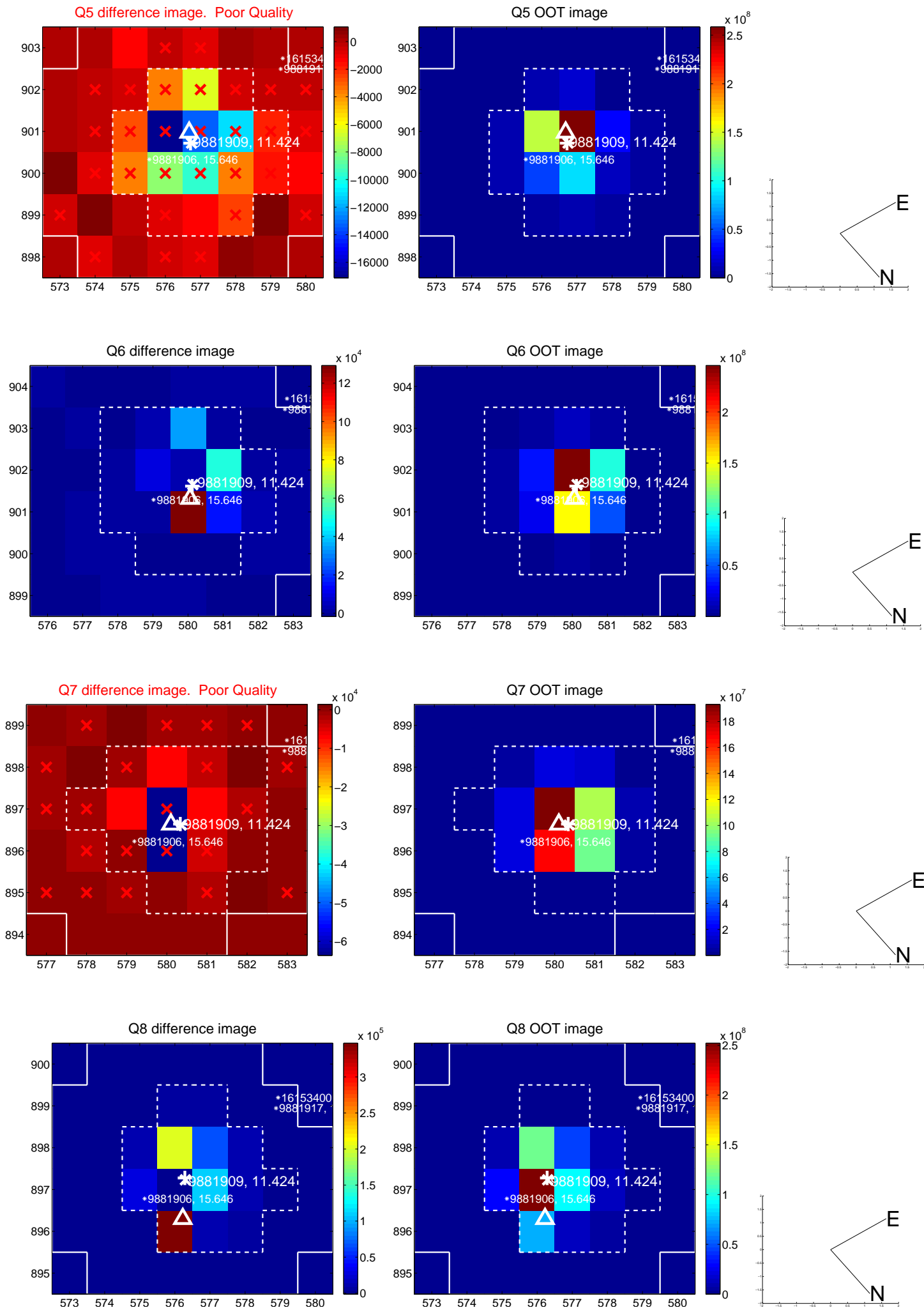


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

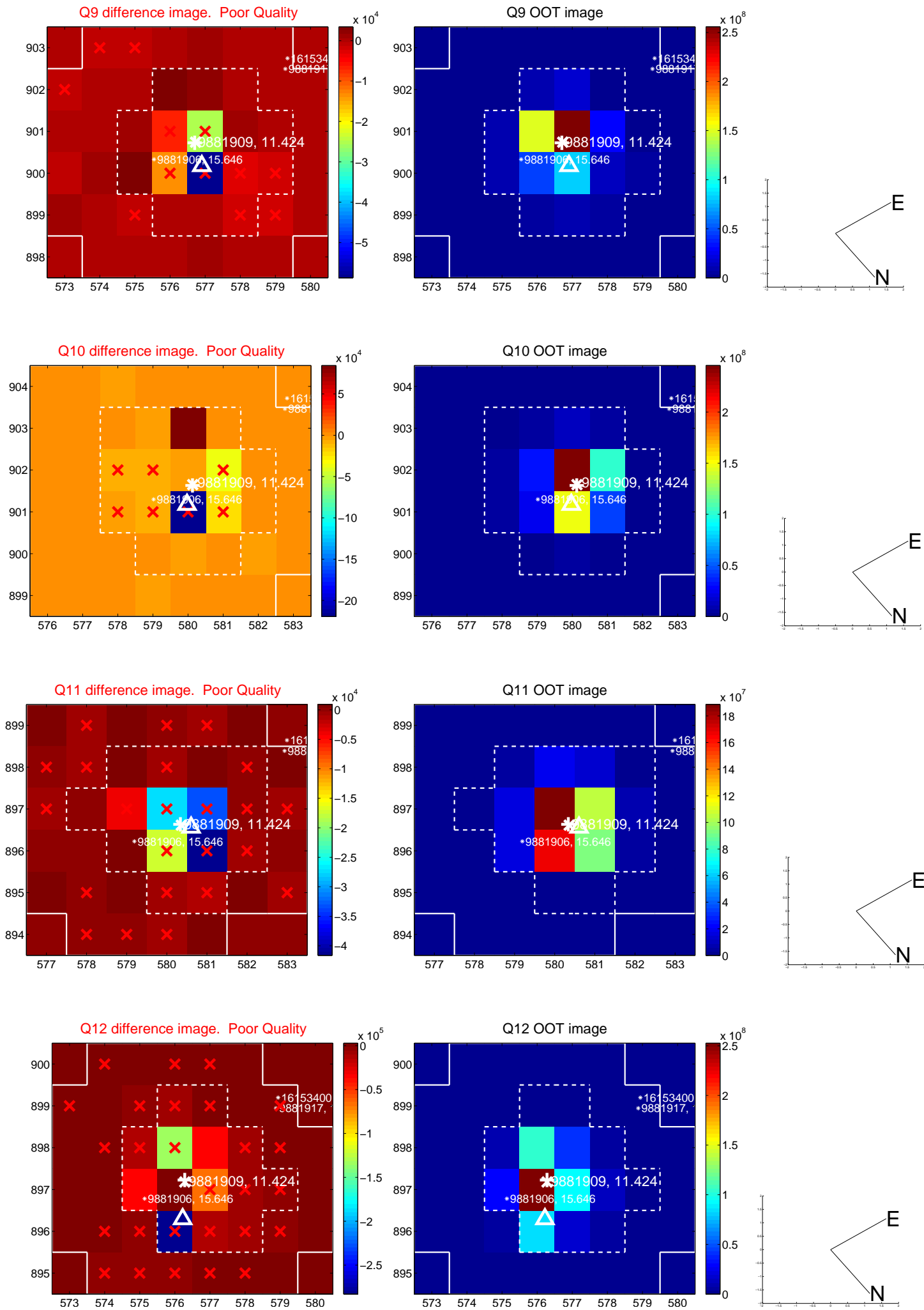
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



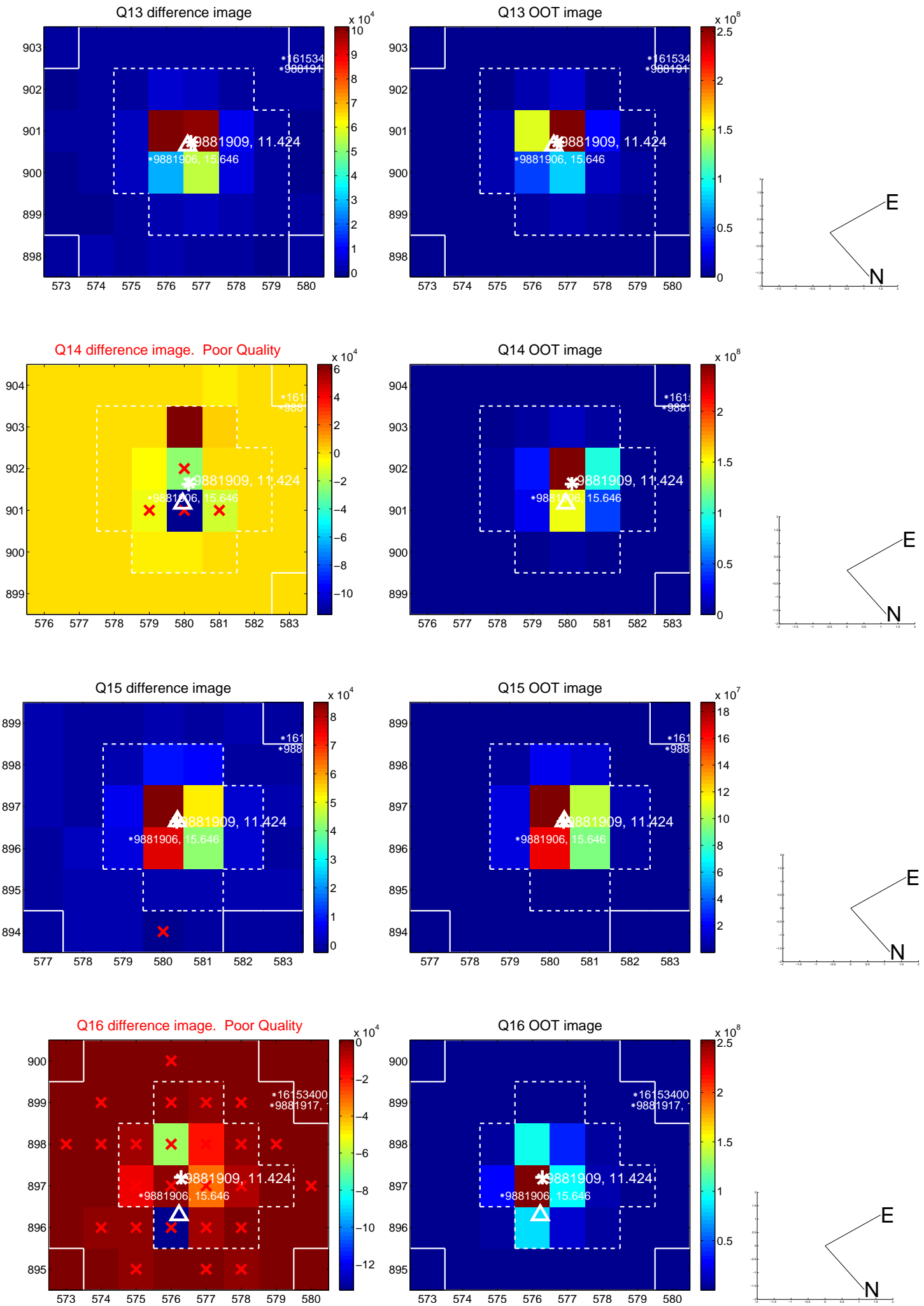
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



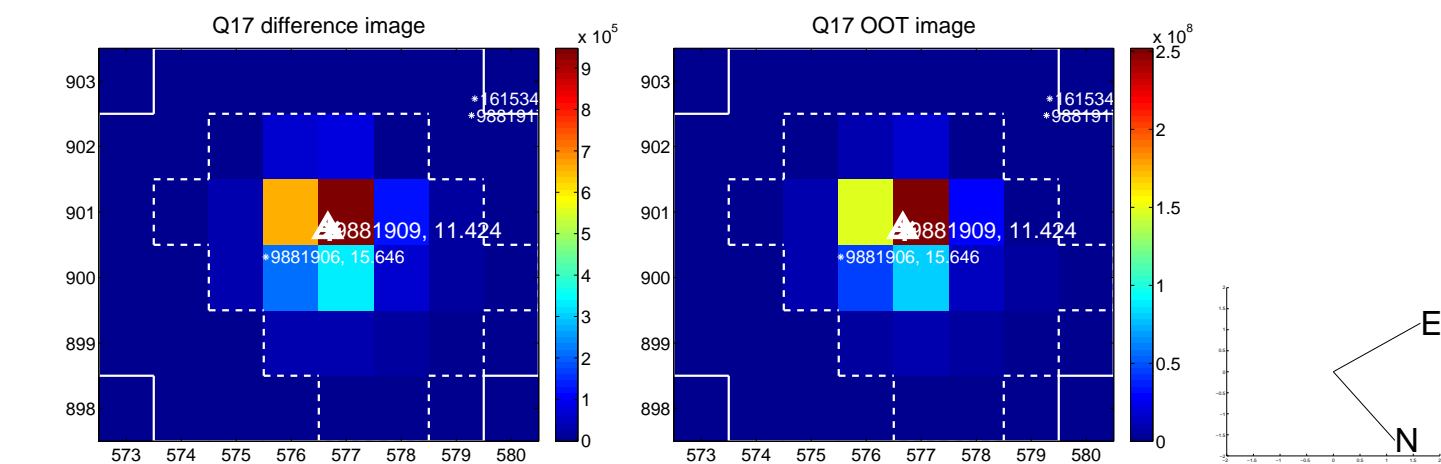
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



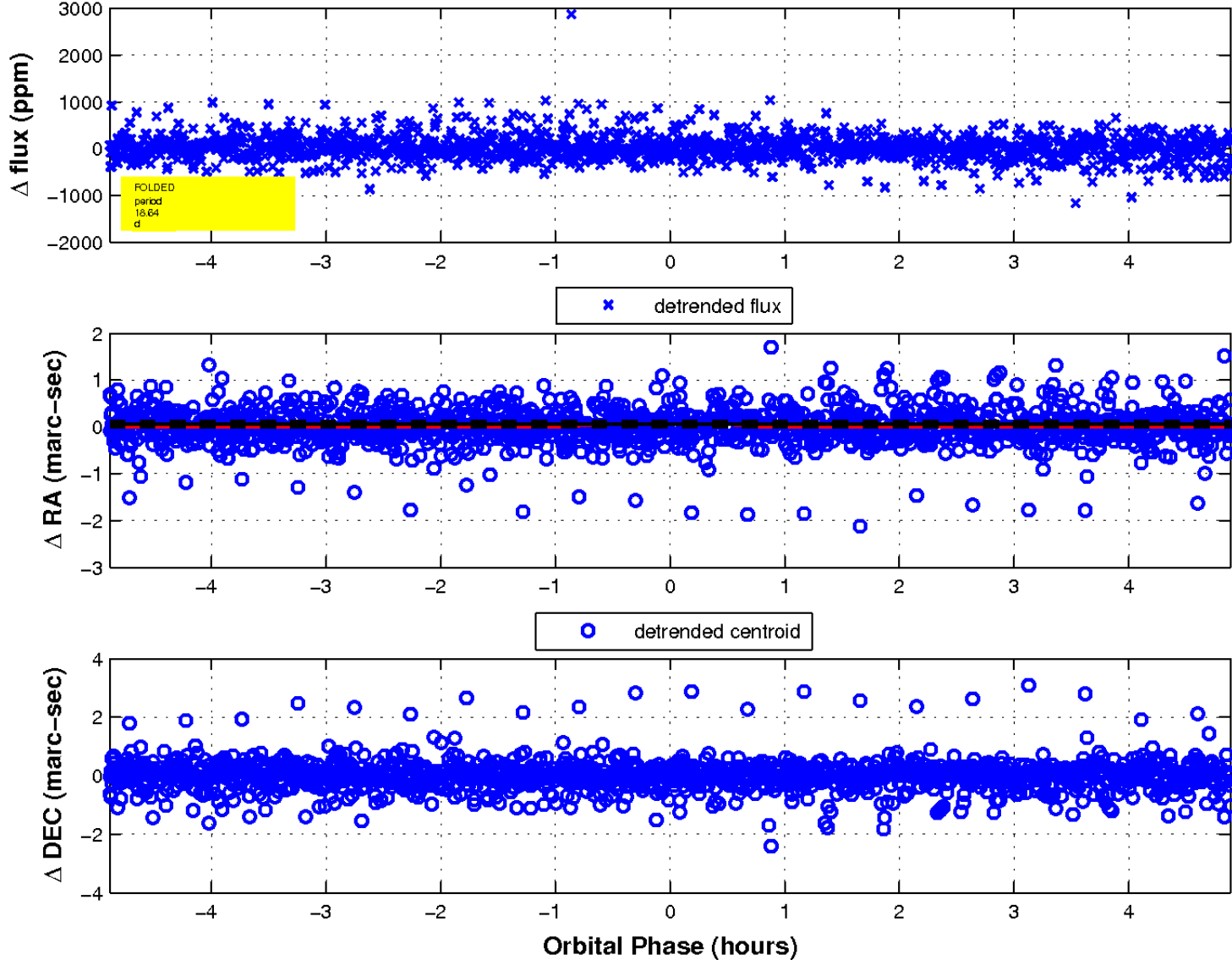
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

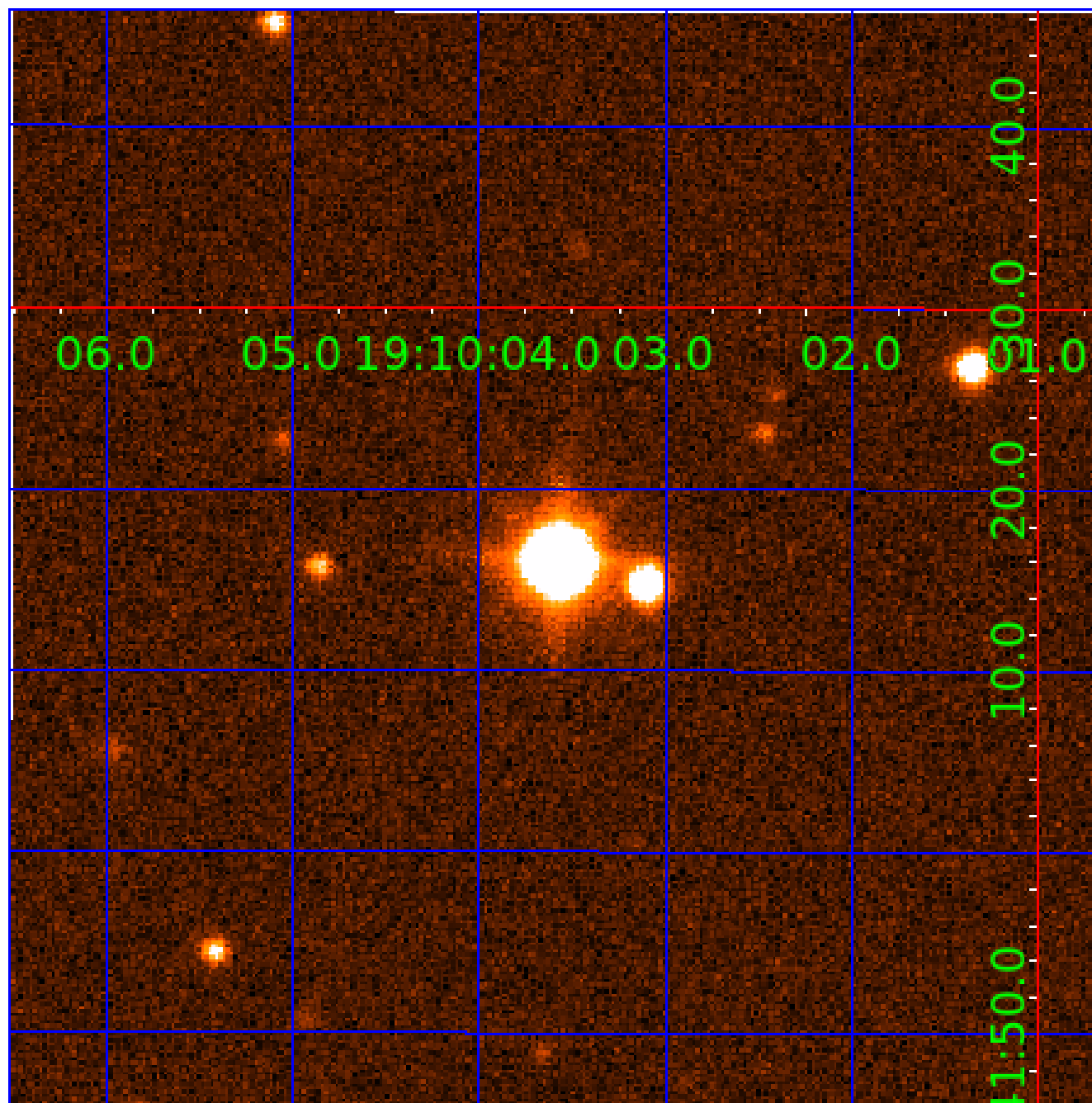


fluxWeightedCentroids, Planet 2 of 6



UKIRT Image

Declination



KIC 009881909

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
009881909-01	OBS	No	0.507848	131.786098	17.8	3.619	10.6	7.9	2.60	7103	1.13	69858.79
009881909-02	OBS	No	18.637909	149.096319	107.3	1.632	10.5	2.9	2.60	7103	3.15	572.80
009881909-03	OBS	No	22.199200	134.663063	518.3	1.166	10.5	10.6	2.60	7103	6.06	453.68
009881909-05	OBS	No	17.363529	139.852949	188.7	2.437	9.6	6.1	2.60	7103	3.85	629.53
009881909-06	OBS	No	17.880135	148.825196	218.6	4.178	10.8	7.3	2.60	7103	4.41	605.39

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009881909-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
009881909-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
009881909-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—CENT_SATURATED
009881909-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_SATURATED
009881909-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

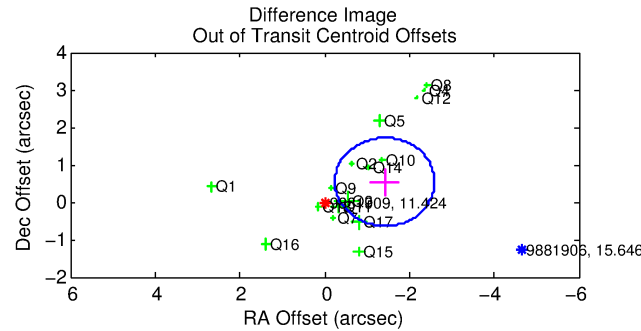
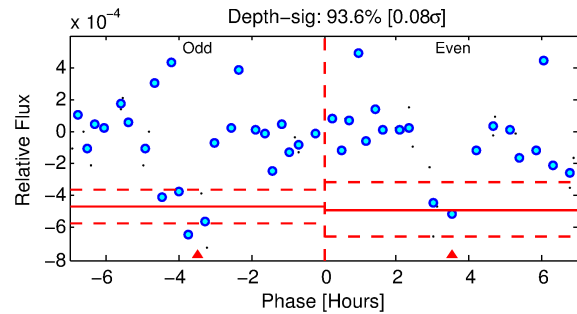
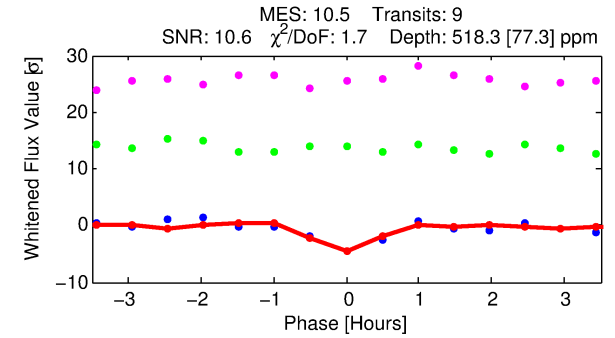
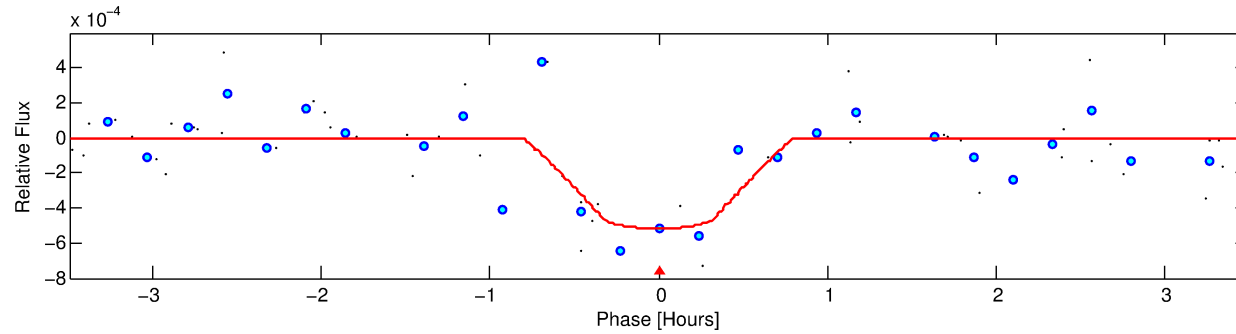
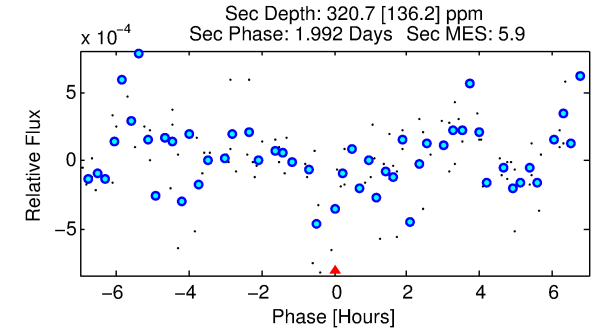
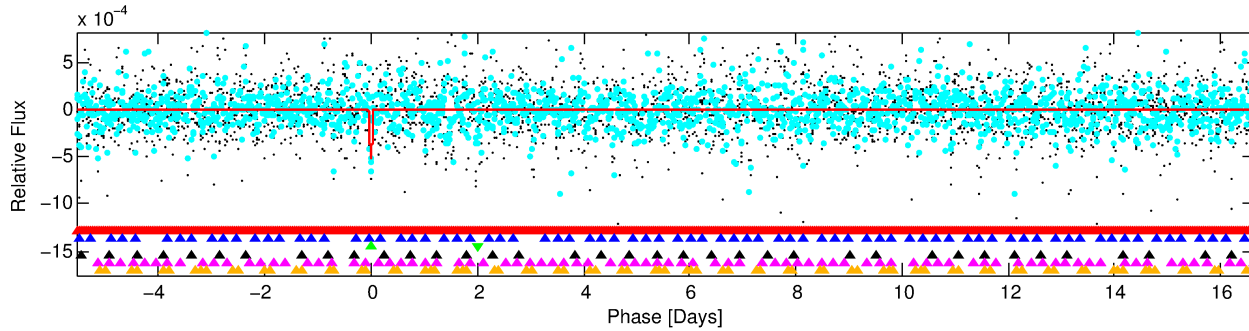
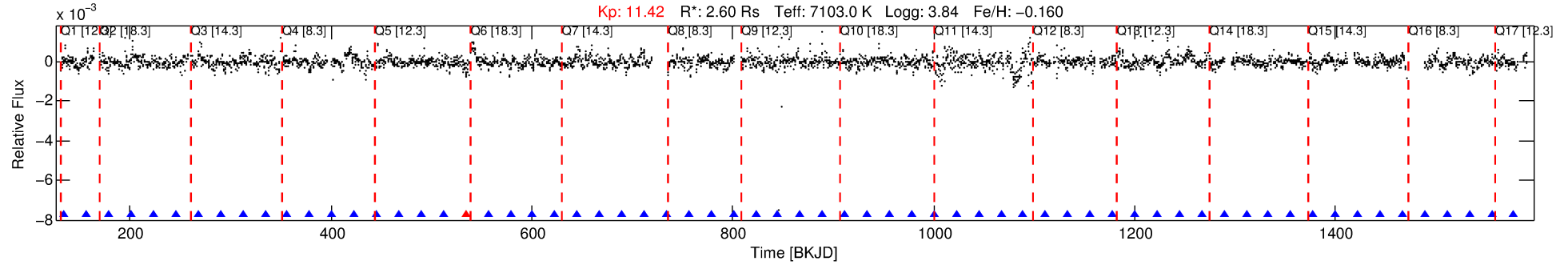
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009881909-03

No Significant Match Found

DV One-Page Summary

KIC: 9881909 Candidate: 3 of 6 Period: 22.199 d



DV Fit Results:

Period = 22.19920 [0.00010] d
Epoch = 134.6631 [0.0059] BKJD
Rp/R* = 0.0214 [0.0506]
a/R* = 139.53 [1773.63]
b = 0.35 [31.83]
Seff = 453.68 [295.97]
Teq = 1177 [192] K
Rp = 6.06 [14.59] Re
a = 0.1843 [0.0754] AU
Ag = 163.02 [781.29] [0.21σ]
Teffp = 6502 [7724] K [0.69σ]

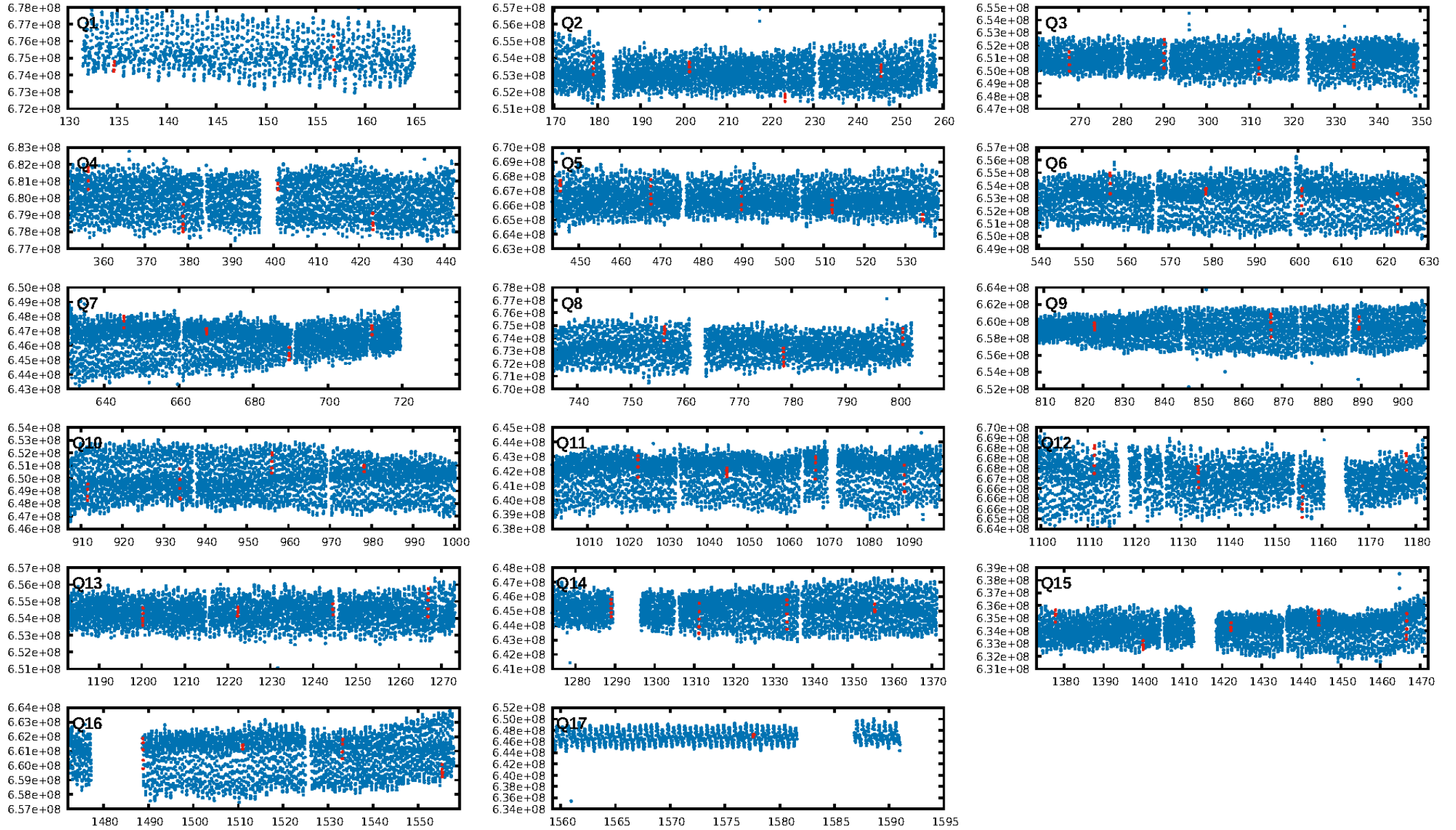
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [42.61σ]
LongPeriod-sig: 100.0% [195.00σ]
ModelChiSquare2-sig: 4.4%
ModelChiSquareGof-sig: 98.8%
Bootstrap-pfa: 1.09e-10
RollingBand-fgt: 0.89 [8/9]
GhostDiagnostic-chr: 0.398
Centroid-sig: N/A
Centroid-so: 0.171 arcsec [1.34σ]
OotOffset-rm: 1.511 arcsec [3.85σ]
KicOffset-rm: 1.694 arcsec [4.10σ]
OotOffset-st: 3/4/4/5 [16]
KicOffset-st: 3/4/4/5 [16]
DiffImageQuality-fgm: 0.31 [5/16]
DiffImageOverlap-fno: 0.00 [0/17]

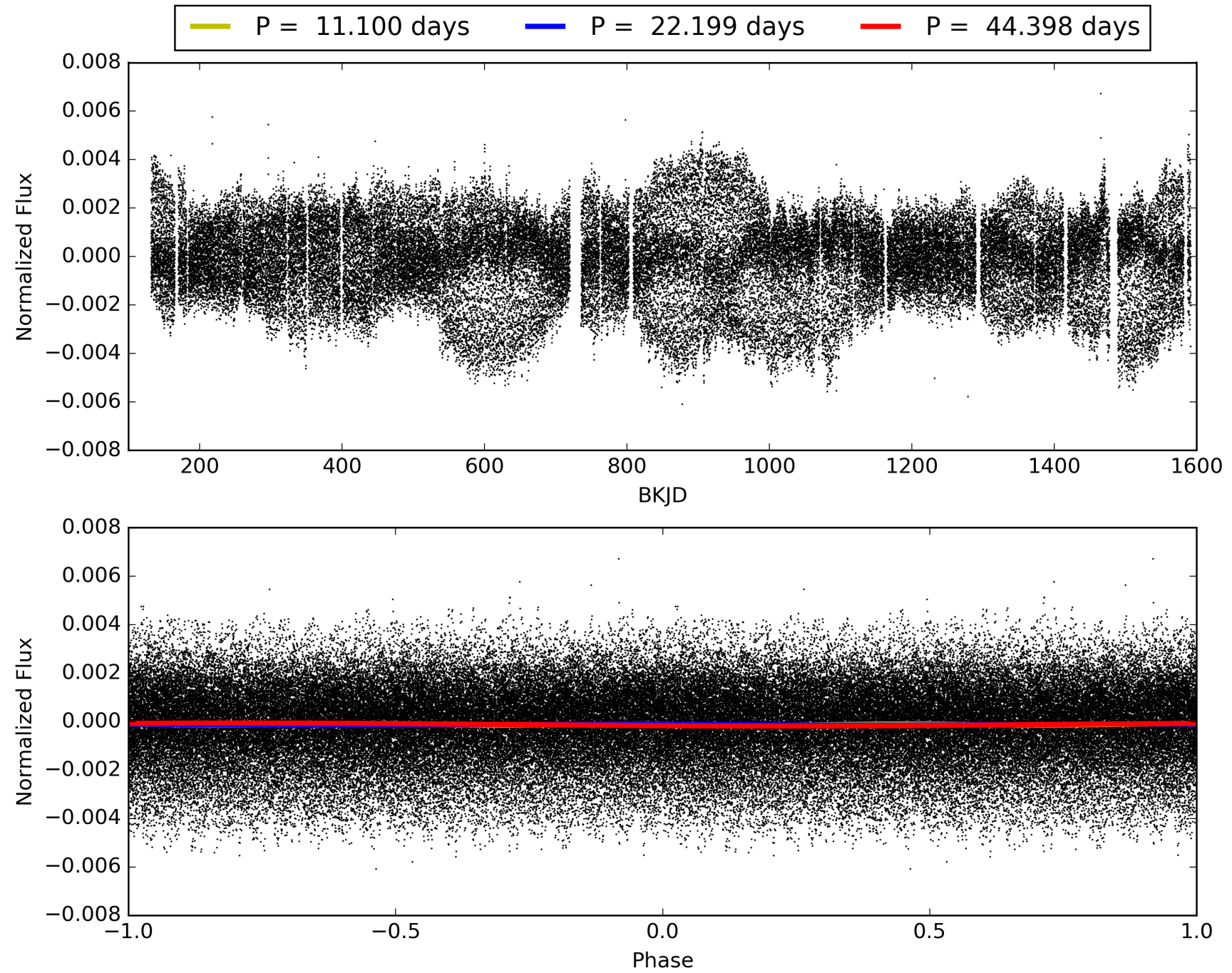
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:23:43 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009881909-03, PDC Light Curves

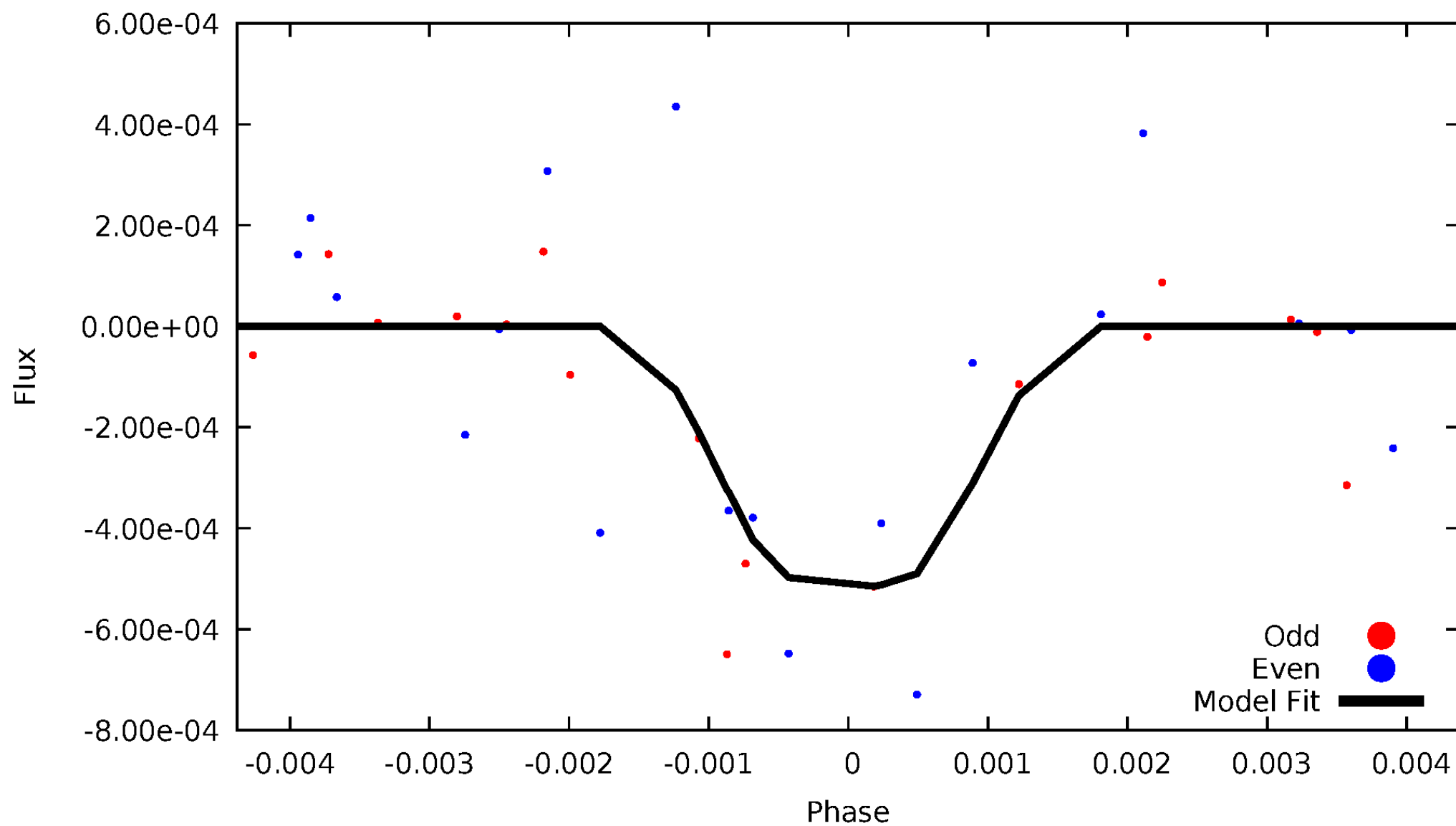


TCE 009881909-03



DV Odd/Even

TCE 009881909-03

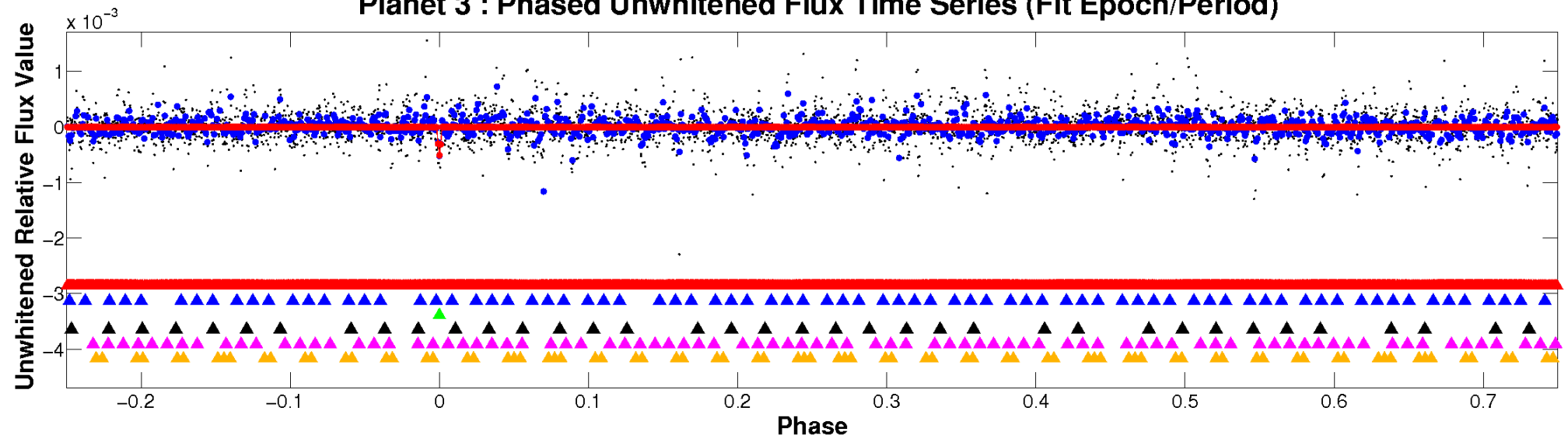


ALT Odd/Even

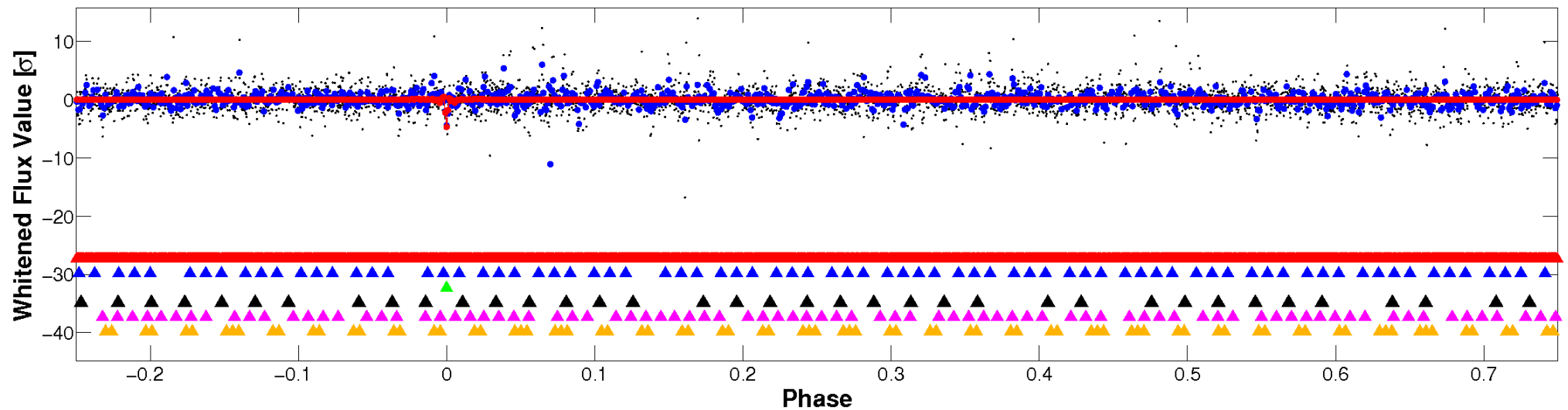
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

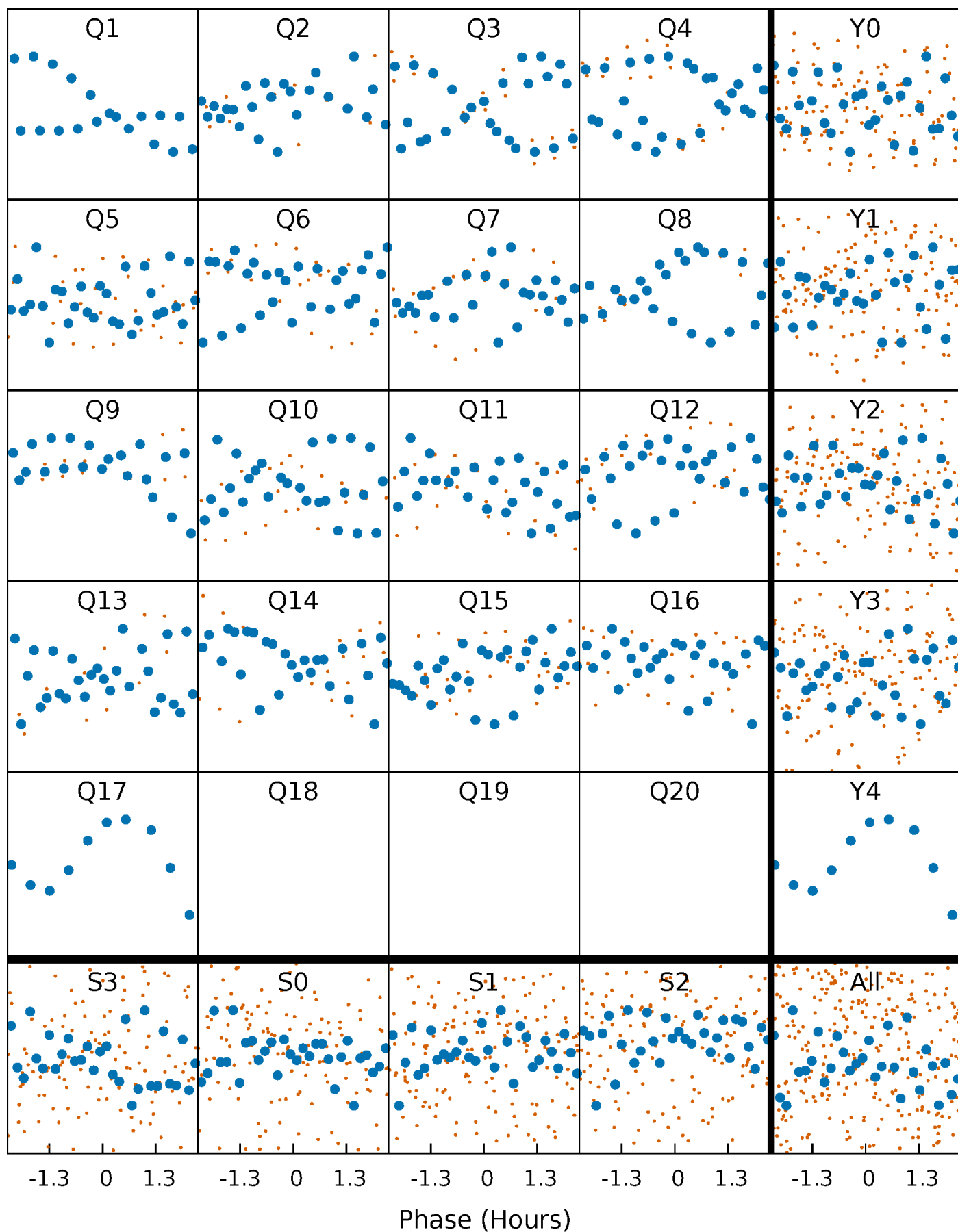


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



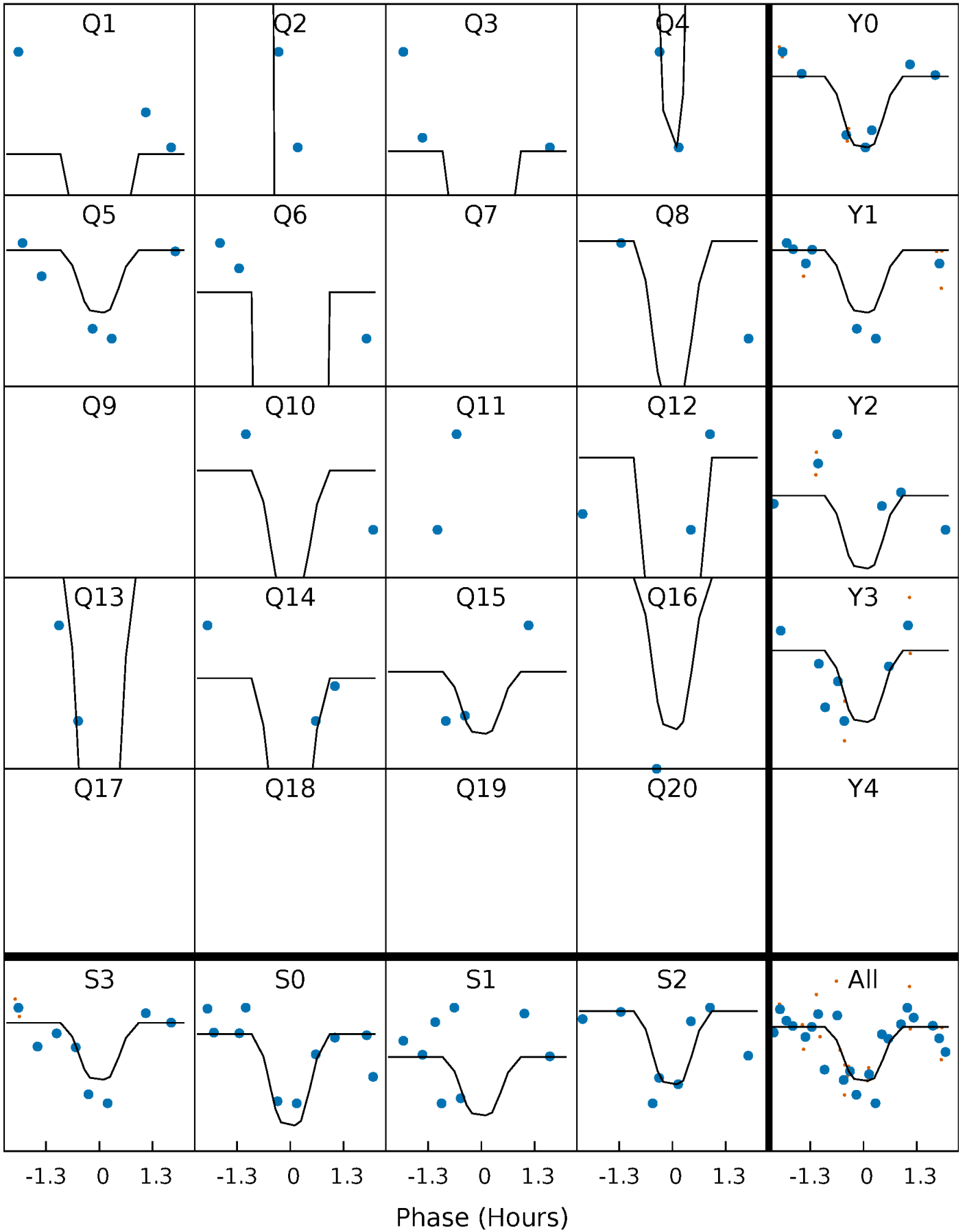
PDC Quarter-Phased Transit Curves

TCE 009881909-03 P= 22.199200 Days $T_0=134.663063$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 009881909-03 $P = 22.199200$ Days $T_0 = 134.663063$ (BKJD)

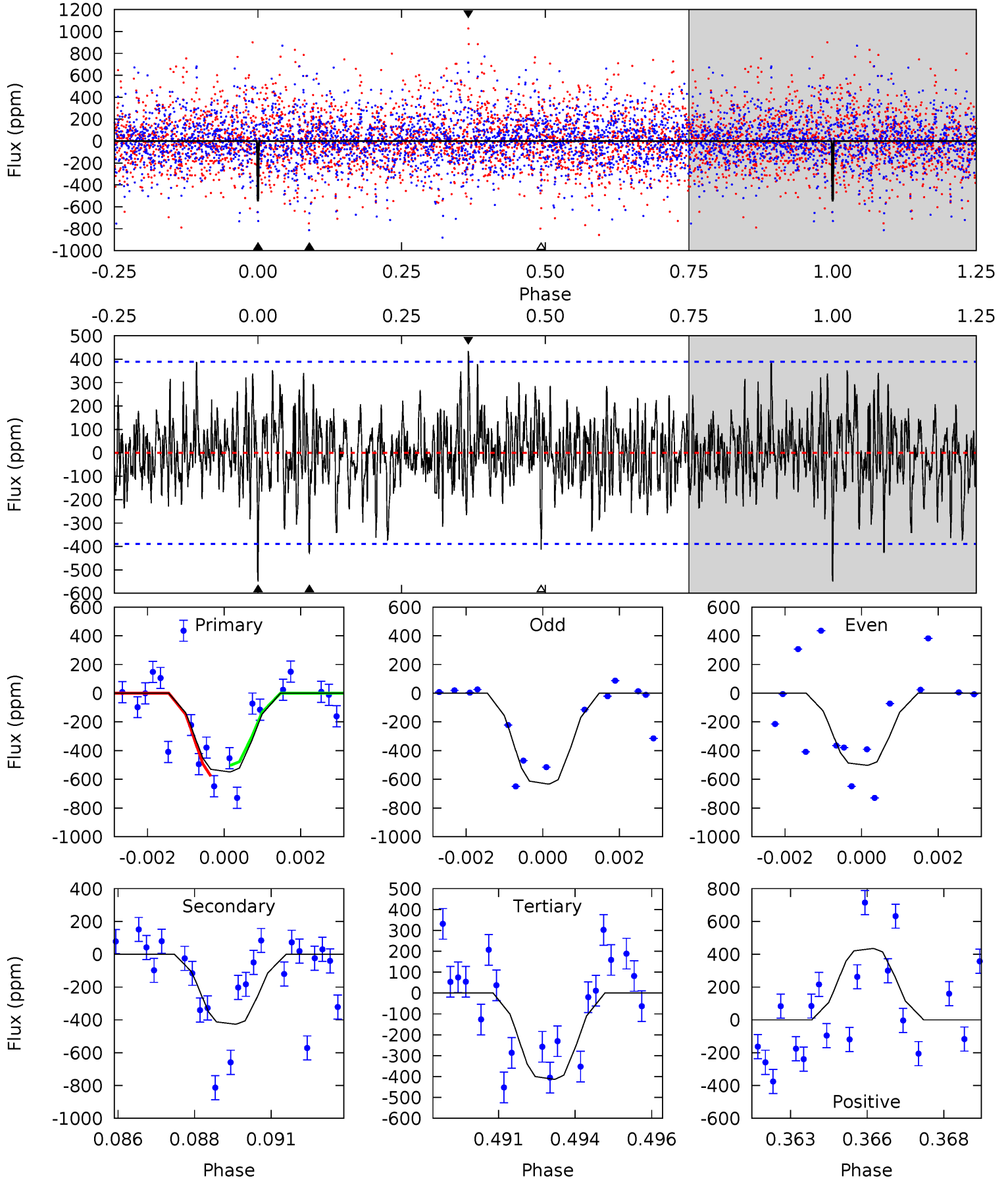


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

009881909-03, P = 22.199200 Days, E = 112.463863 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.46	5.80	5.62	5.91	5.29	3.03	1.60	1.84	1.54	0.18	-0.11	0.84	1.02	0.44	0.50



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 009881909

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7103^{+169}_{-253}	$3.837^{+0.367}_{-0.122}$	$-0.160^{+0.250}_{-0.350}$	$2.599^{+0.496}_{-1.156}$	$1.691^{+0.182}_{-0.425}$	$0.136^{+0.432}_{-0.053}$
	+2%/-4%	+10%/-3%	+156%/-219%	+19%/-44%	+11%/-25%	+319%/-39%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 009881909-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-427 ± 74	$11.11^{+11.44}_{-7.49}$	1617^{+103}_{-176}	4919^{+3811}_{-1089}	59^{+537}_{-45}
Alt.	N/A	N/A	N/A	N/A	N/A

T_{max} = Theoretical Maximum Planetary Temperature
 T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)
 A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

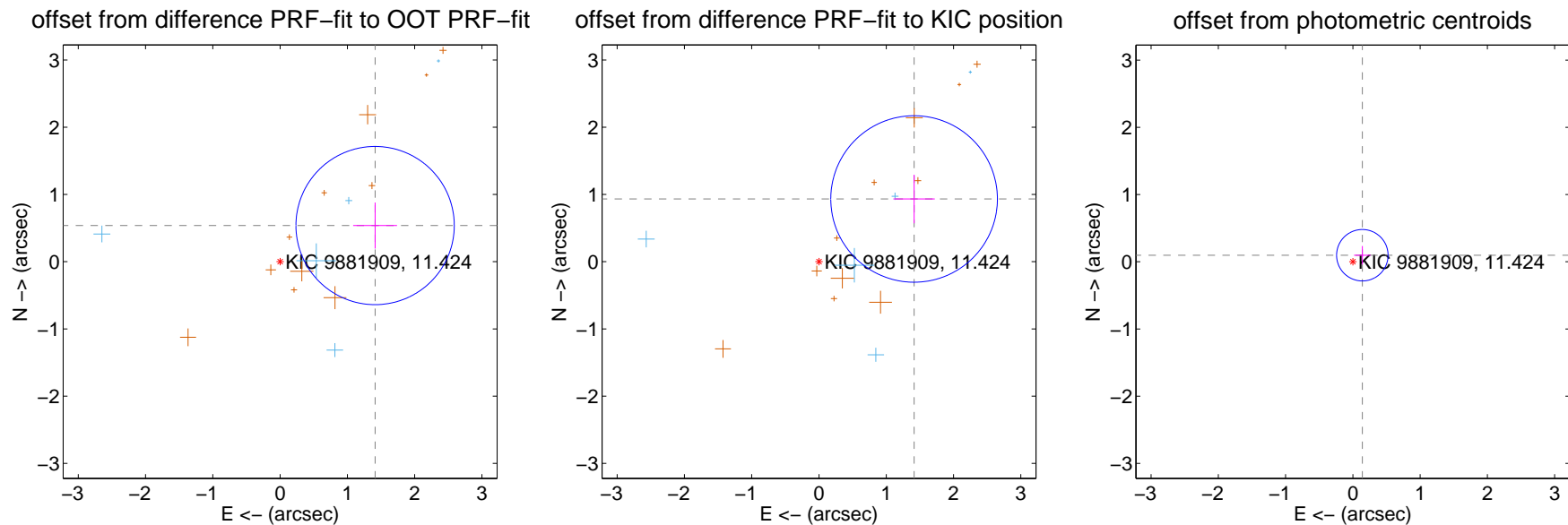
DV Centroid Data

Supplemental centroid analysis for 009881909-03. **Kepler magnitude: 11.42.** Transit SNR 10.62

There are 5 quarters with good PRF difference image offsets

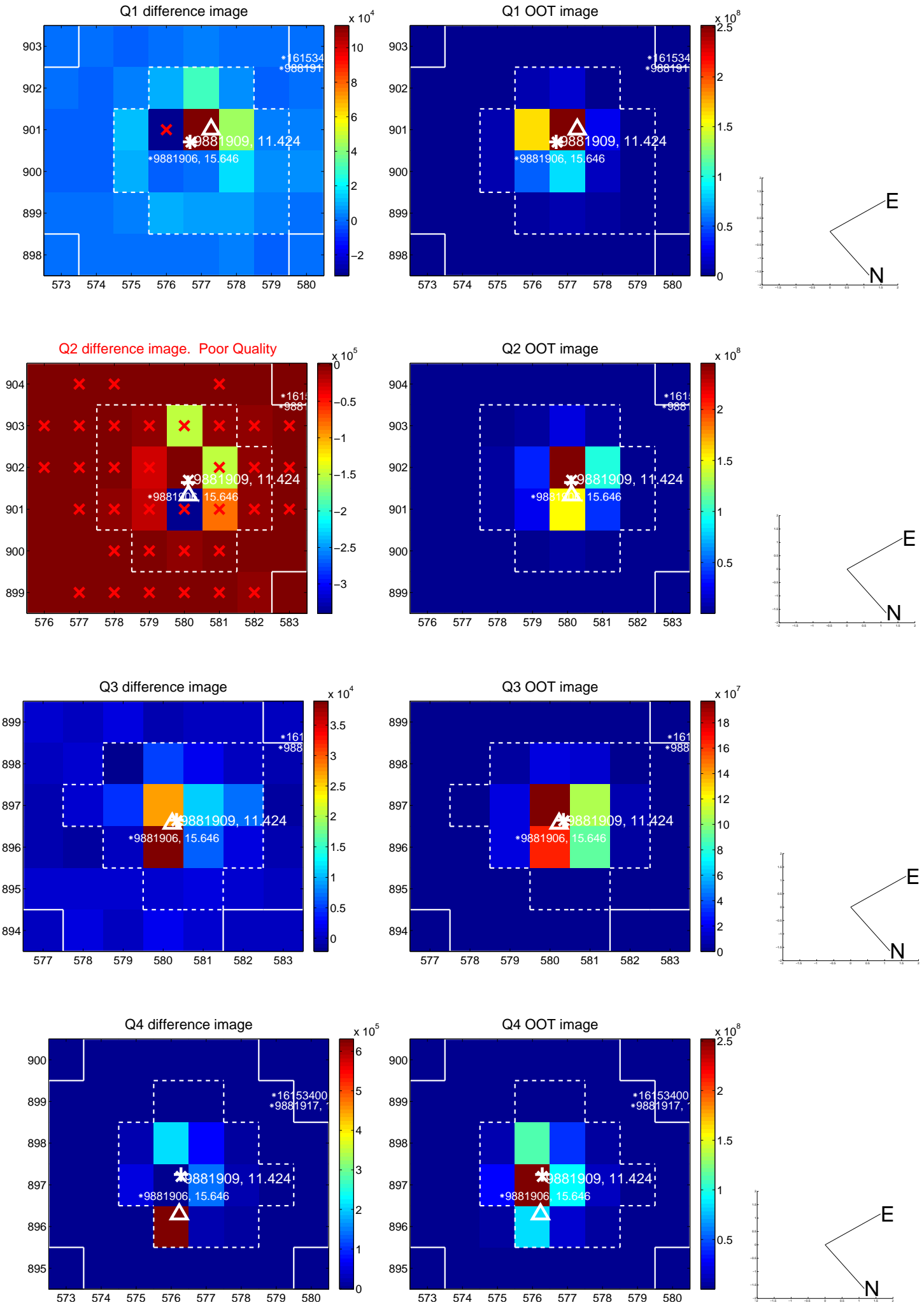
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.511 ± 0.392	3.85	-1.412 ± 0.326	0.538 ± 0.343
PRF-fit source offset from KIC position	1.694 ± 0.413	4.10	-1.414 ± 0.308	0.933 ± 0.361
photometric centroid source offset	0.17 ± 0.13	1.34	-0.14 ± 0.12	0.10 ± 0.14

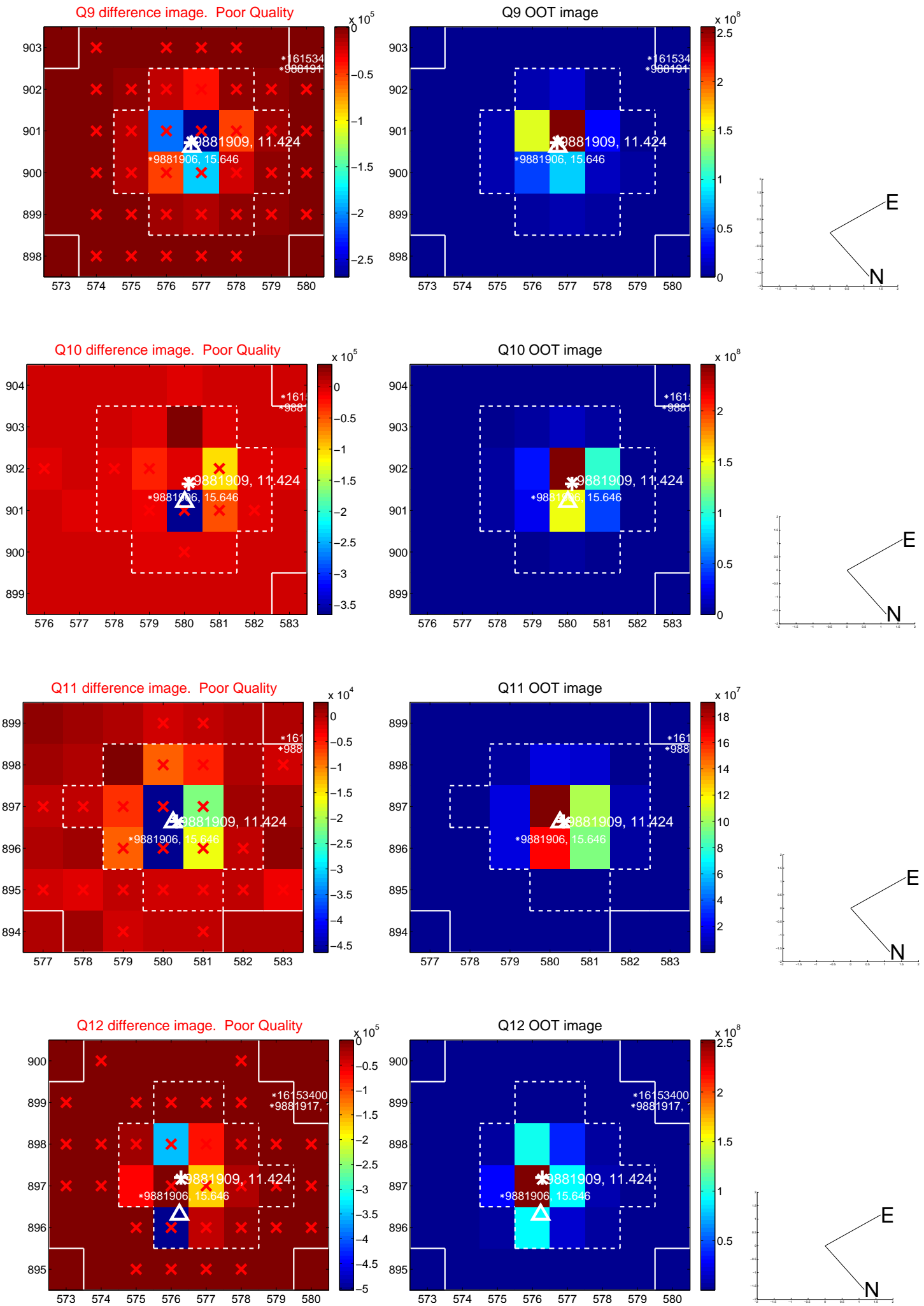


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

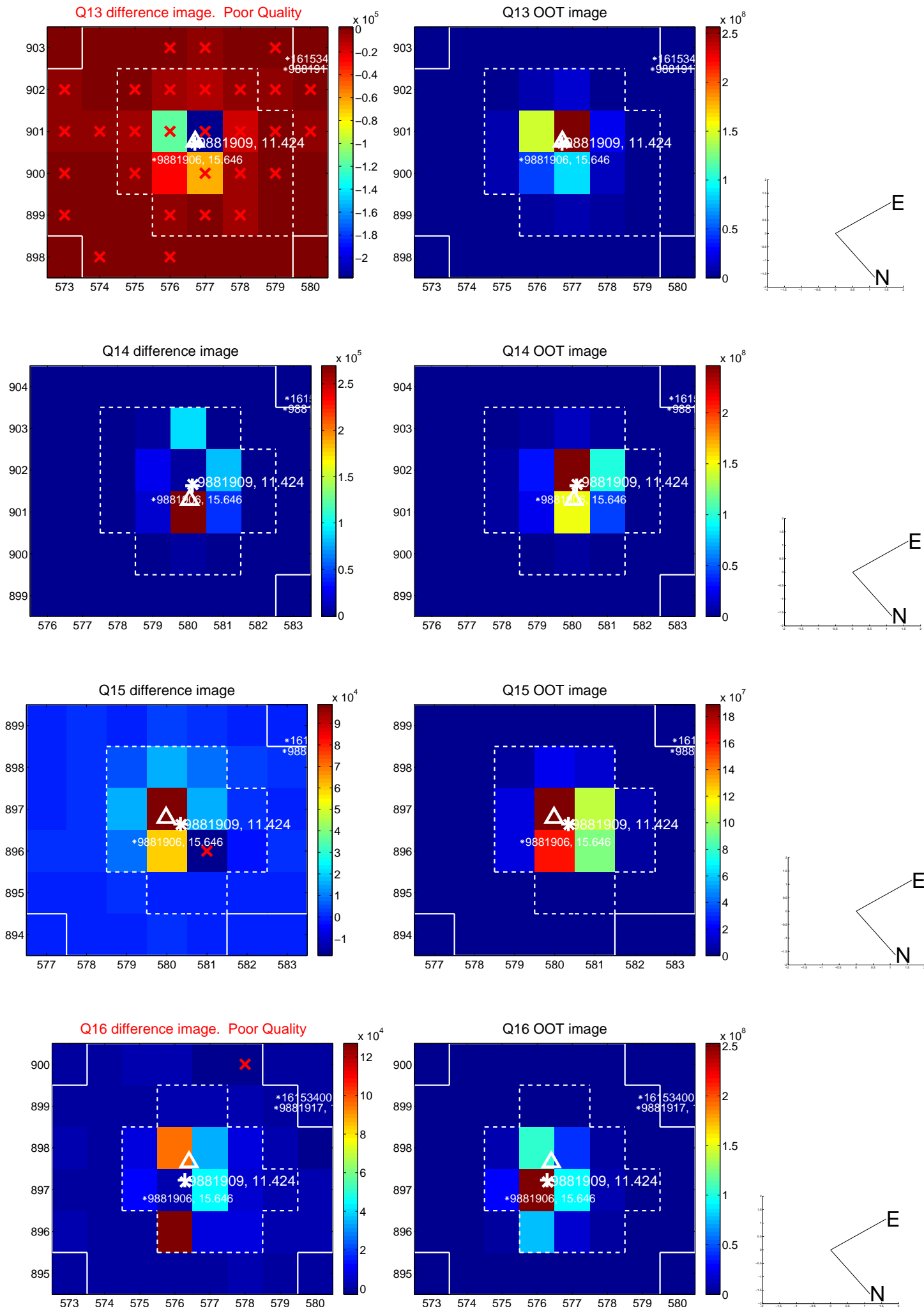
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



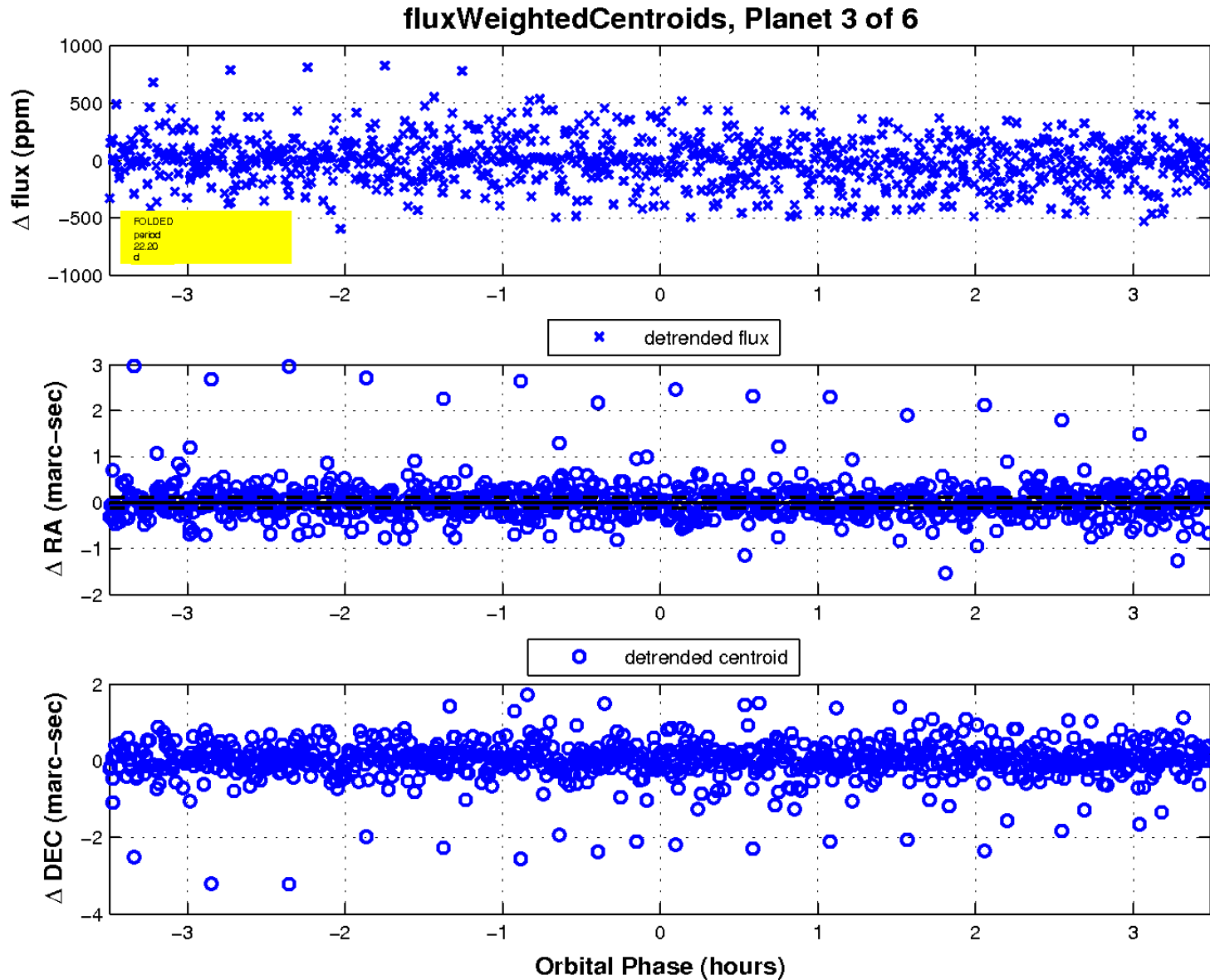
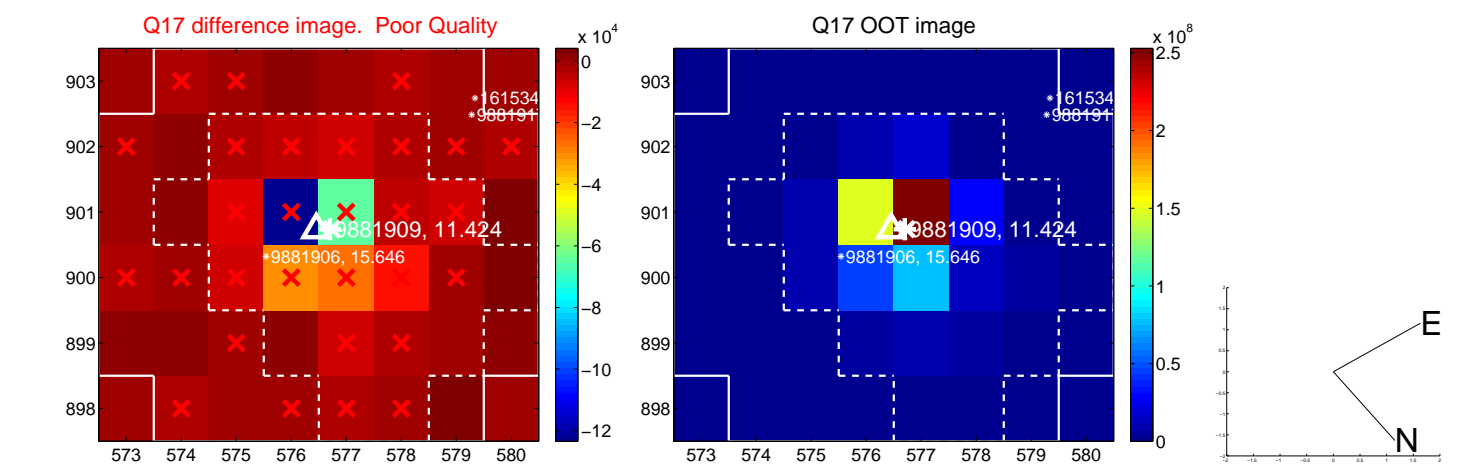
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

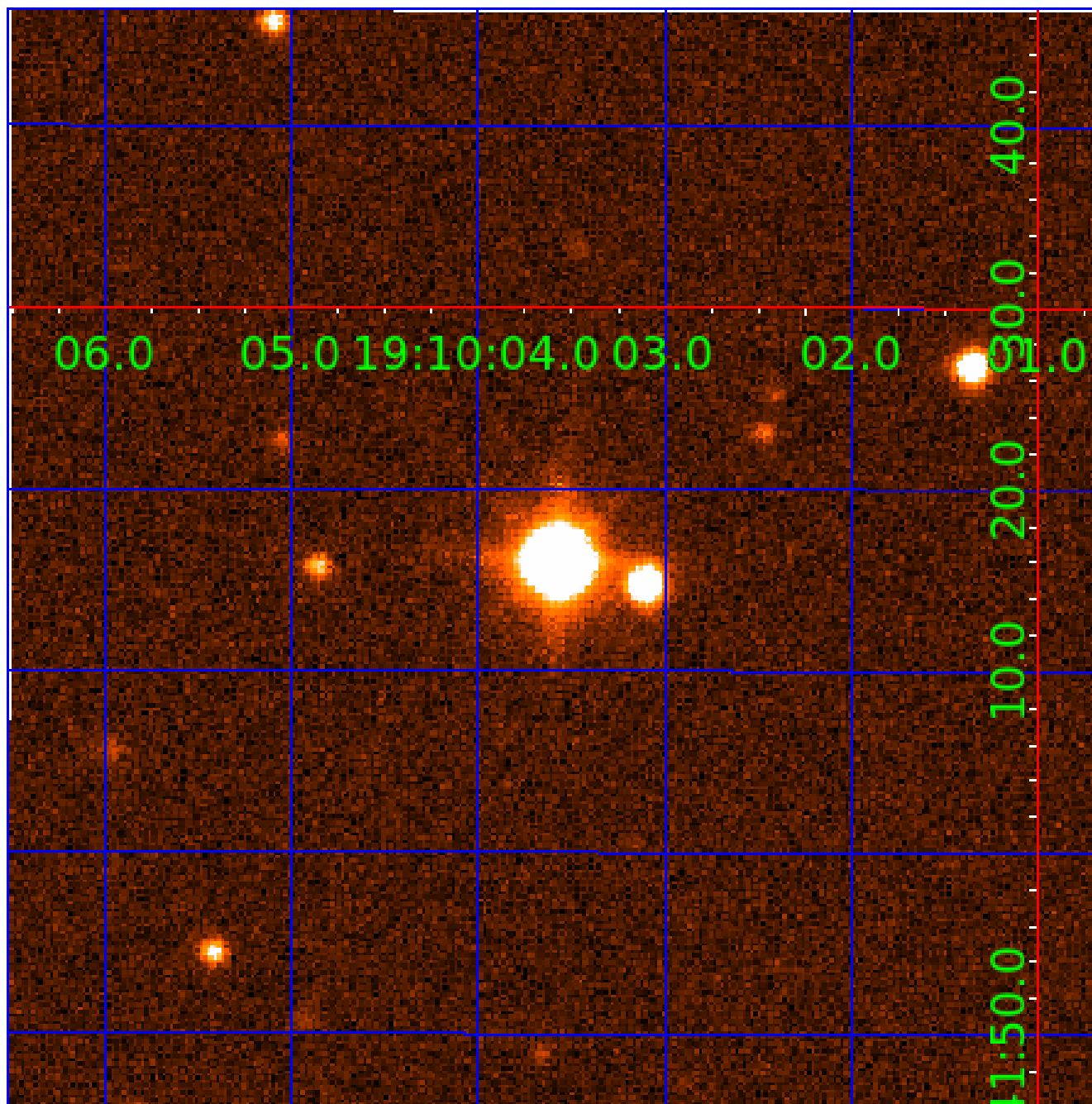


white \times : KIC target position; +: OOT centroid; Δ : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009881909

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
009881909-01	OBS	No	0.507848	131.786098	17.8	3.619	10.6	7.9	2.60	7103	1.13	69858.79
009881909-02	OBS	No	18.637909	149.096319	107.3	1.632	10.5	2.9	2.60	7103	3.15	572.80
009881909-03	OBS	No	22.199200	134.663063	518.3	1.166	10.5	10.6	2.60	7103	6.06	453.68
009881909-05	OBS	No	17.363529	139.852949	188.7	2.437	9.6	6.1	2.60	7103	3.85	629.53
009881909-06	OBS	No	17.880135	148.825196	218.6	4.178	10.8	7.3	2.60	7103	4.41	605.39

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009881909-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
009881909-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
009881909-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—CENT_SATURATED
009881909-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_SATURATED
009881909-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

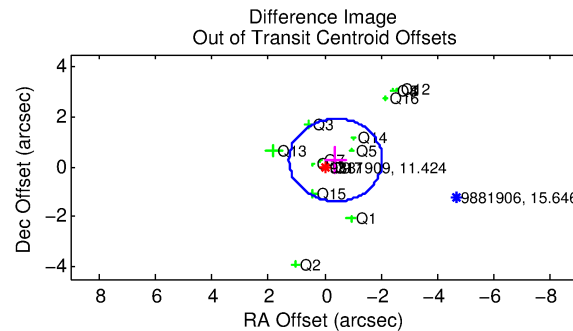
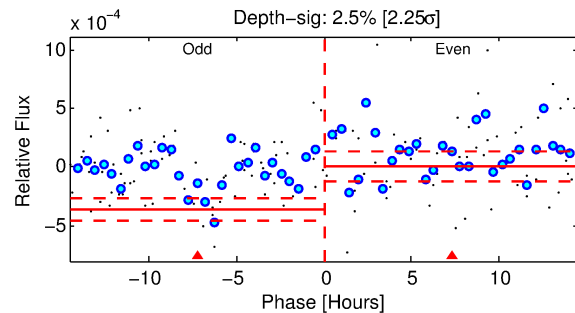
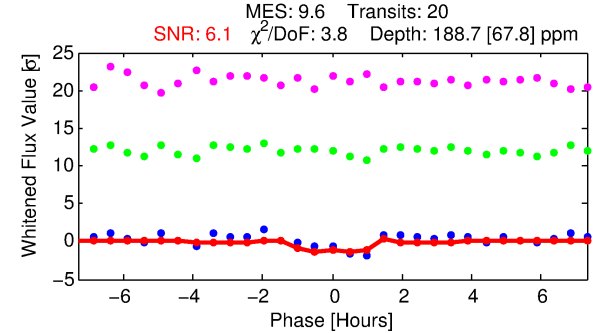
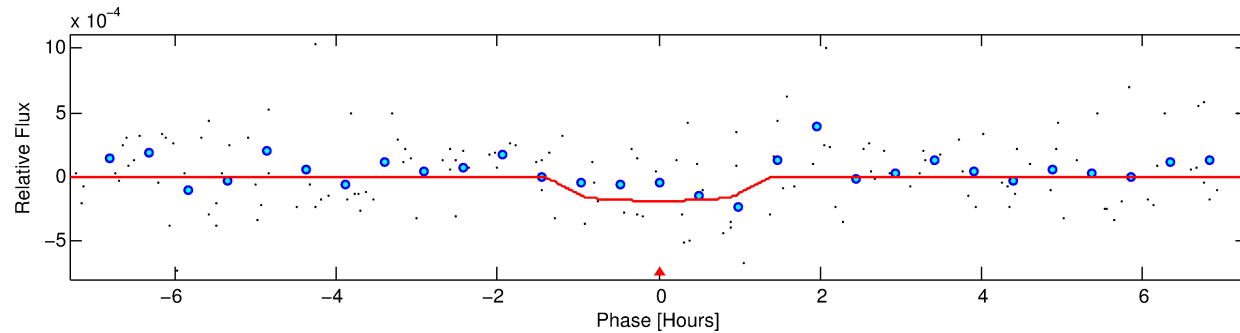
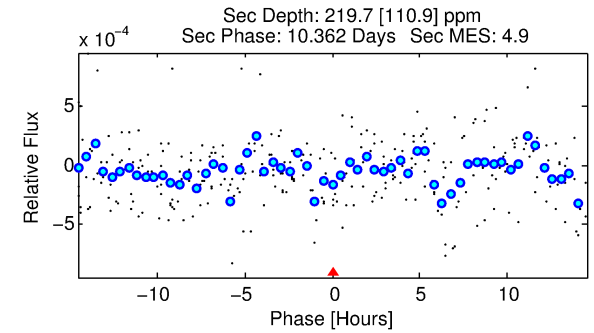
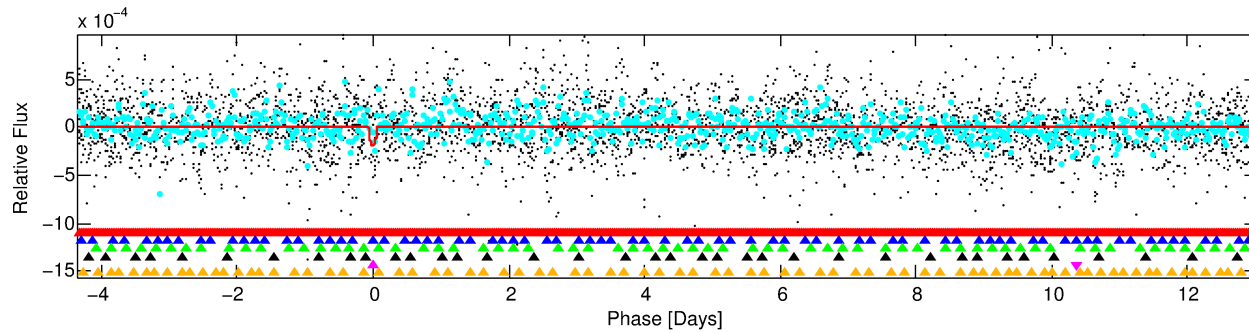
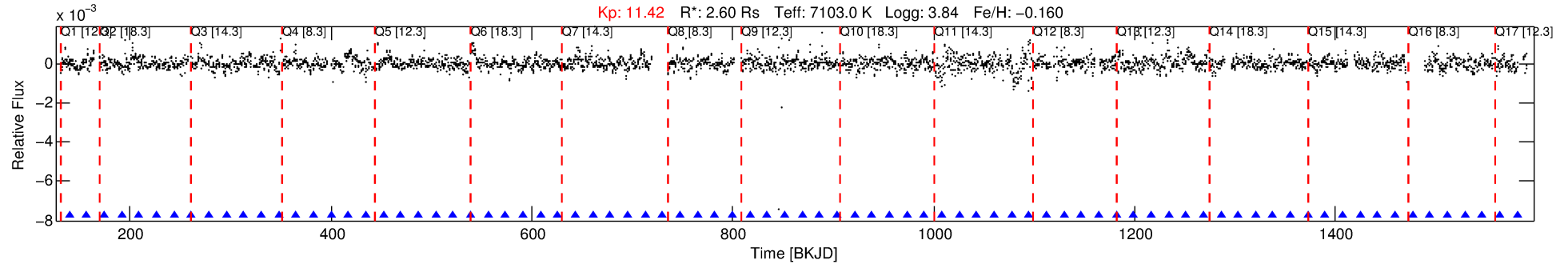
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009881909-05

No Significant Match Found

DV One-Page Summary

KIC: 9881909 Candidate: 5 of 6 Period: 17.364 d



DV Fit Results:

Period = 17.36353 [0.00048] d
Epoch = 139.8529 [0.0171] BKJD
Rp/R* = 0.0136 [0.0206]
a/R* = 38.74 [324.08]
b = 0.72 [5.61]
Seff = 629.53 [410.70]
Teq = 1277 [208] K
Rp = 3.85 [6.10] Re
a = 0.1564 [0.0640] AU
Ag = 199.72 [628.72] [0.32σ]
Teffp = 7424 [5728] K [1.07σ]

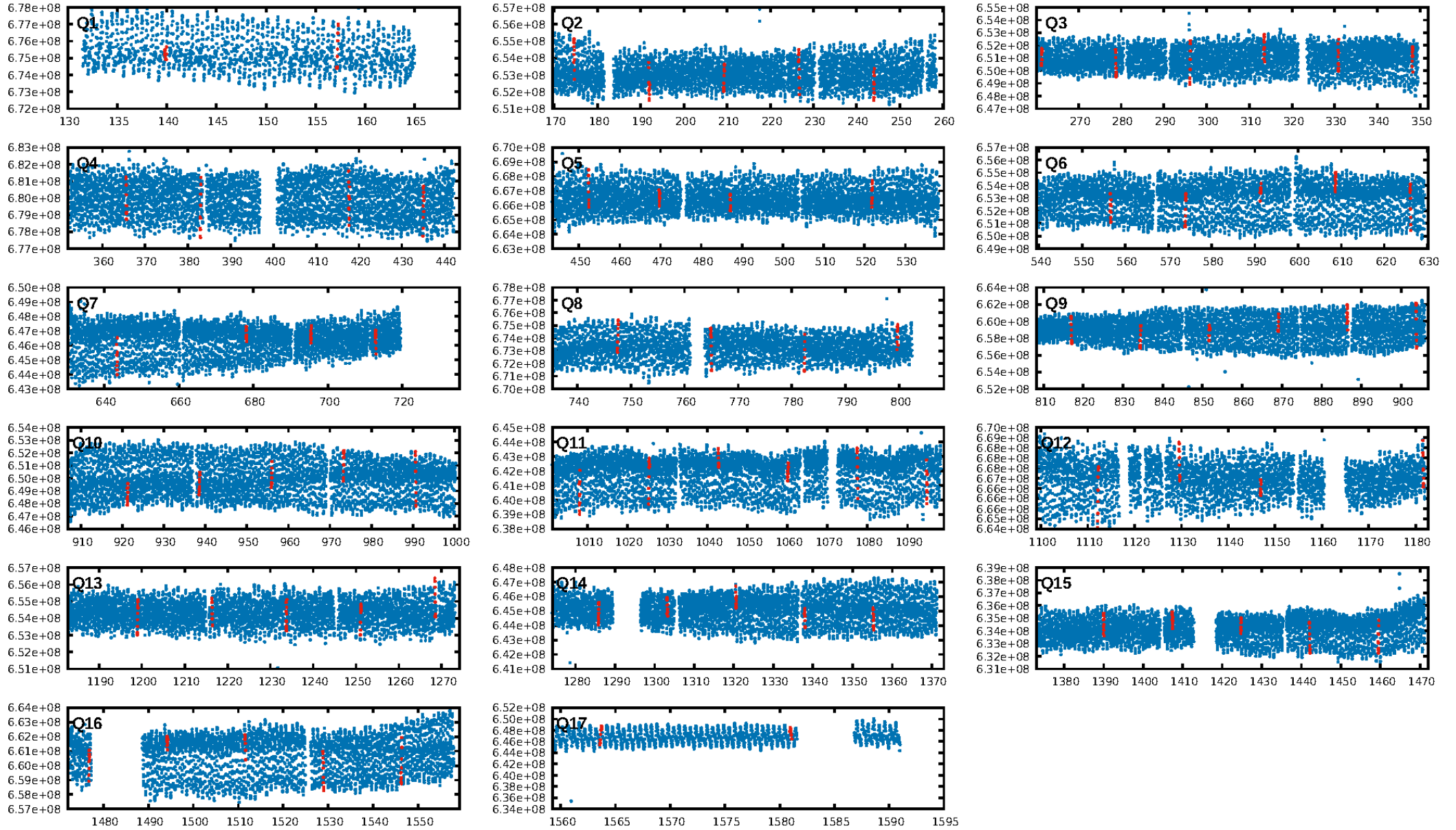
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [92.71σ]
LongPeriod-sig: 99.0% [2.56σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 70.1%
Bootstrap-pfa: 1.20e-10
RollingBand-fgt: 1.00 [19/19]
GhostDiagnostic-chr: -2.188
Centroid-sig: N/A
Centroid-so: 0.438 arcsec [1.85σ]
OotOffset-rm: 0.474 arcsec [0.86σ]
KicOffset-rm: 0.562 arcsec [1.24σ]
OotOffset-st: 2/4/4/5 [15]
KicOffset-st: 2/4/4/5 [15]
DiffImageQuality-fgm: 0.67 [10/15]
DiffImageOverlap-fno: 0.00 [0/17]

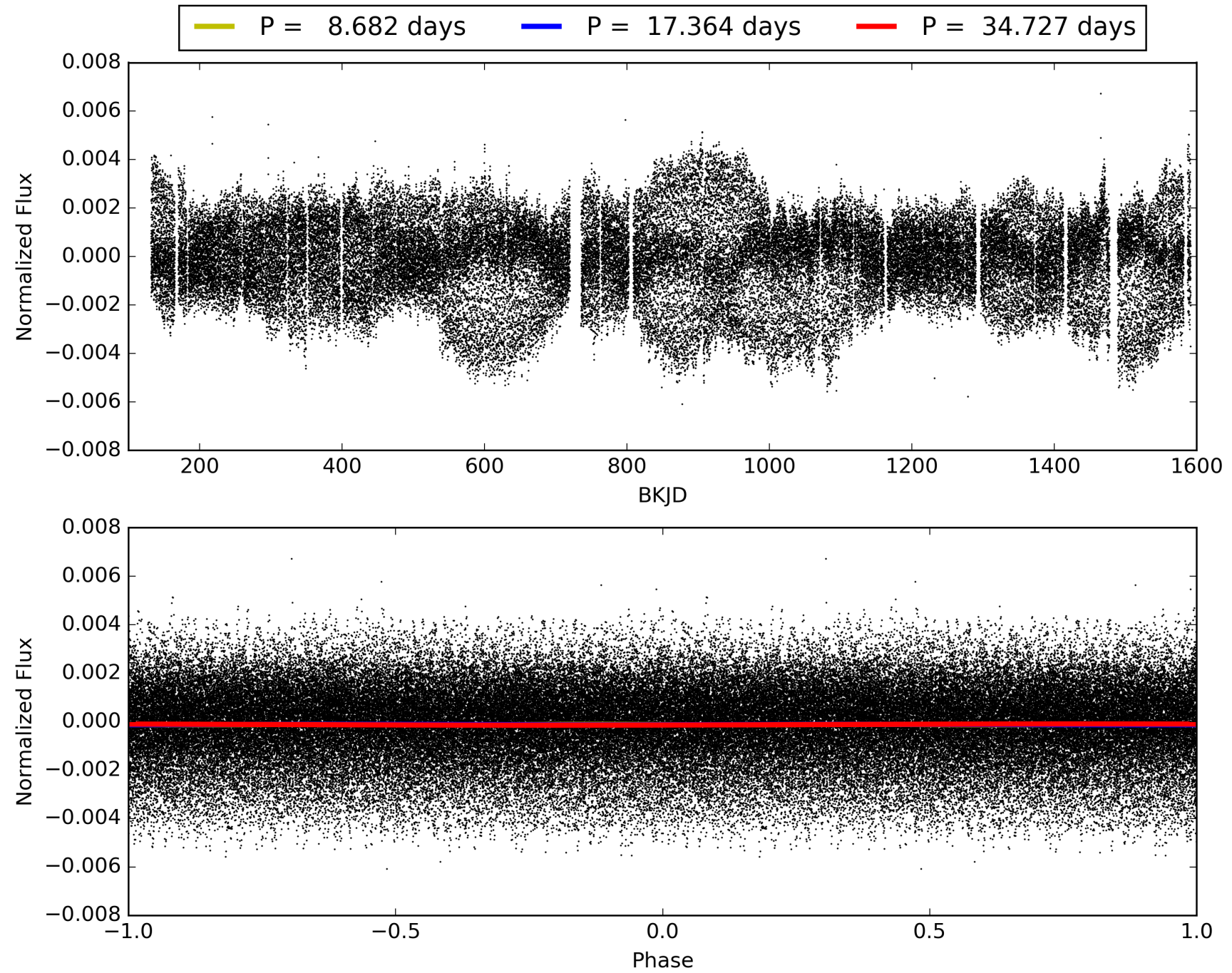
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:23:49 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009881909-05, PDC Light Curves

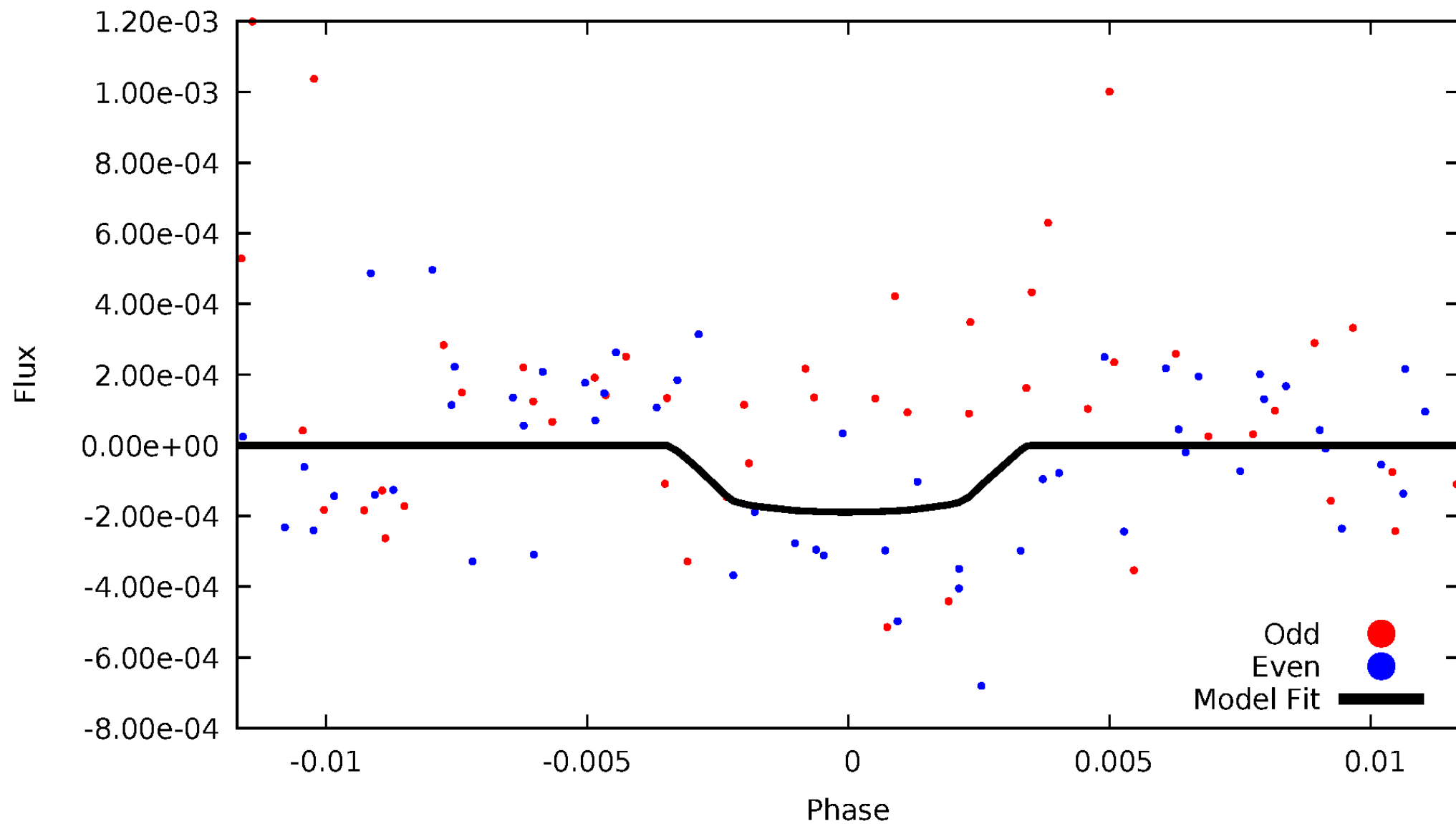


TCE 009881909-05



DV Odd/Even

TCE 009881909-05

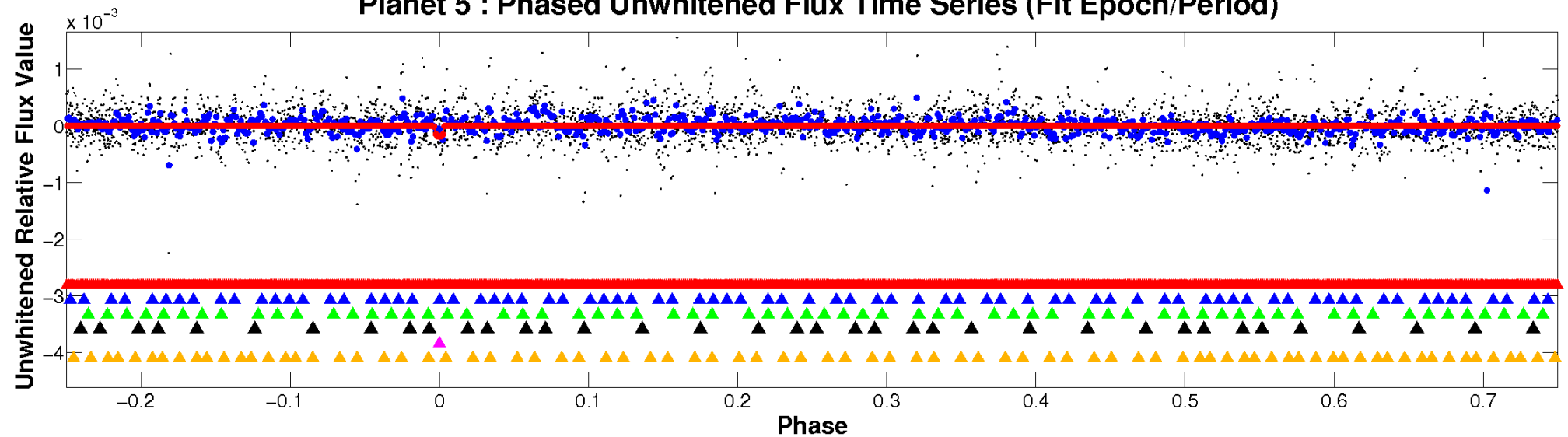


ALT Odd/Even

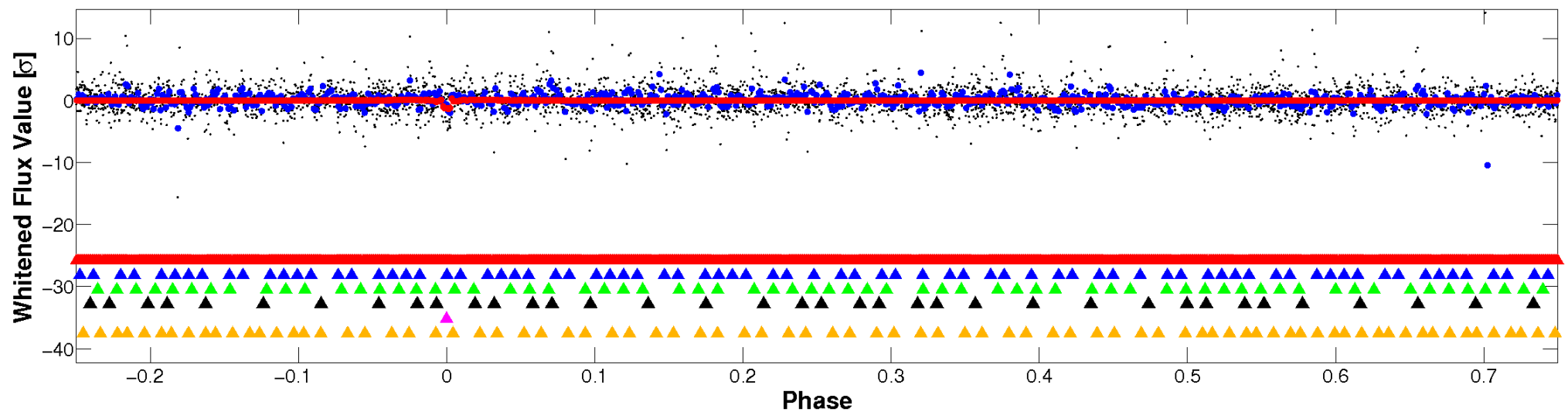
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

Planet 5 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

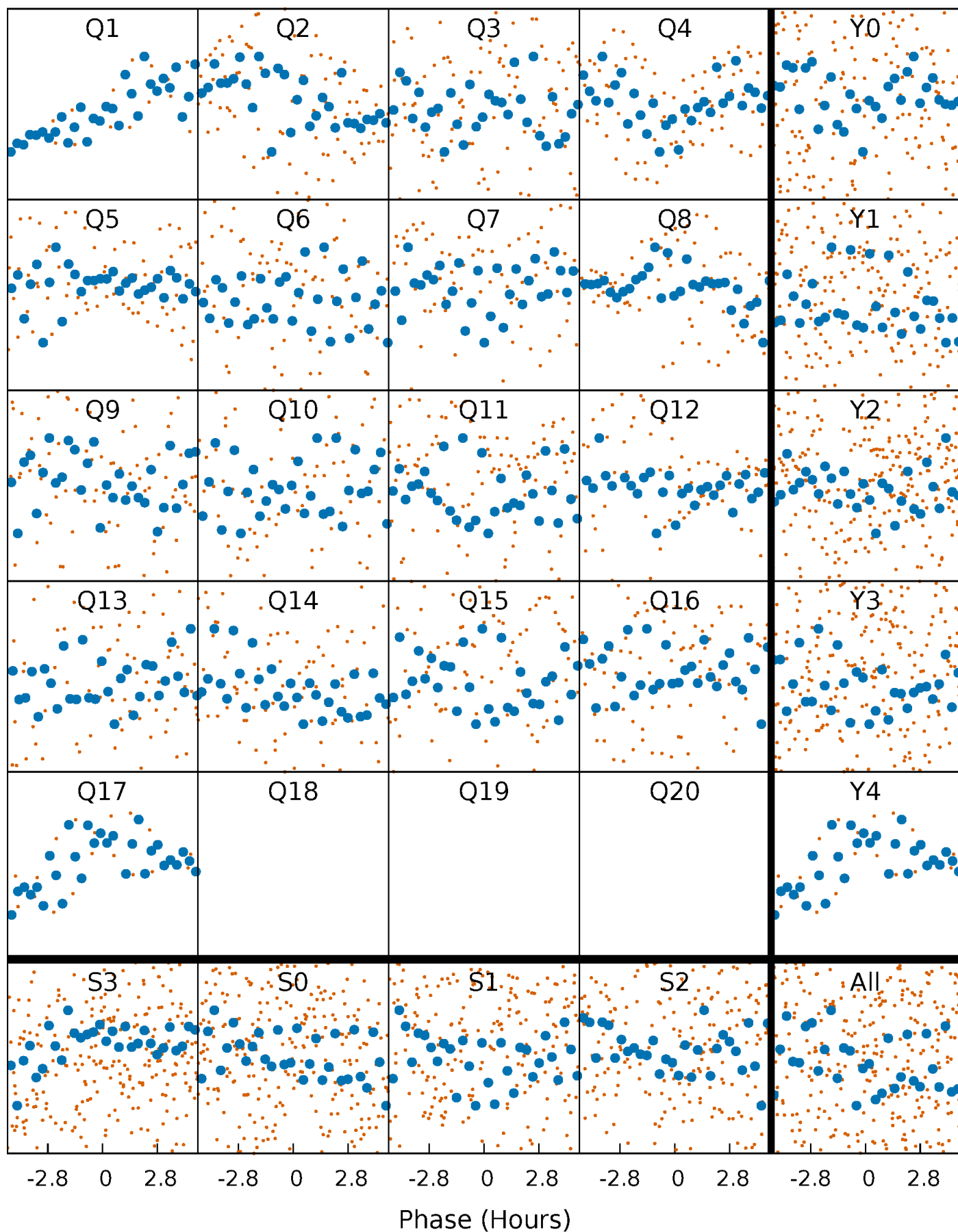


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



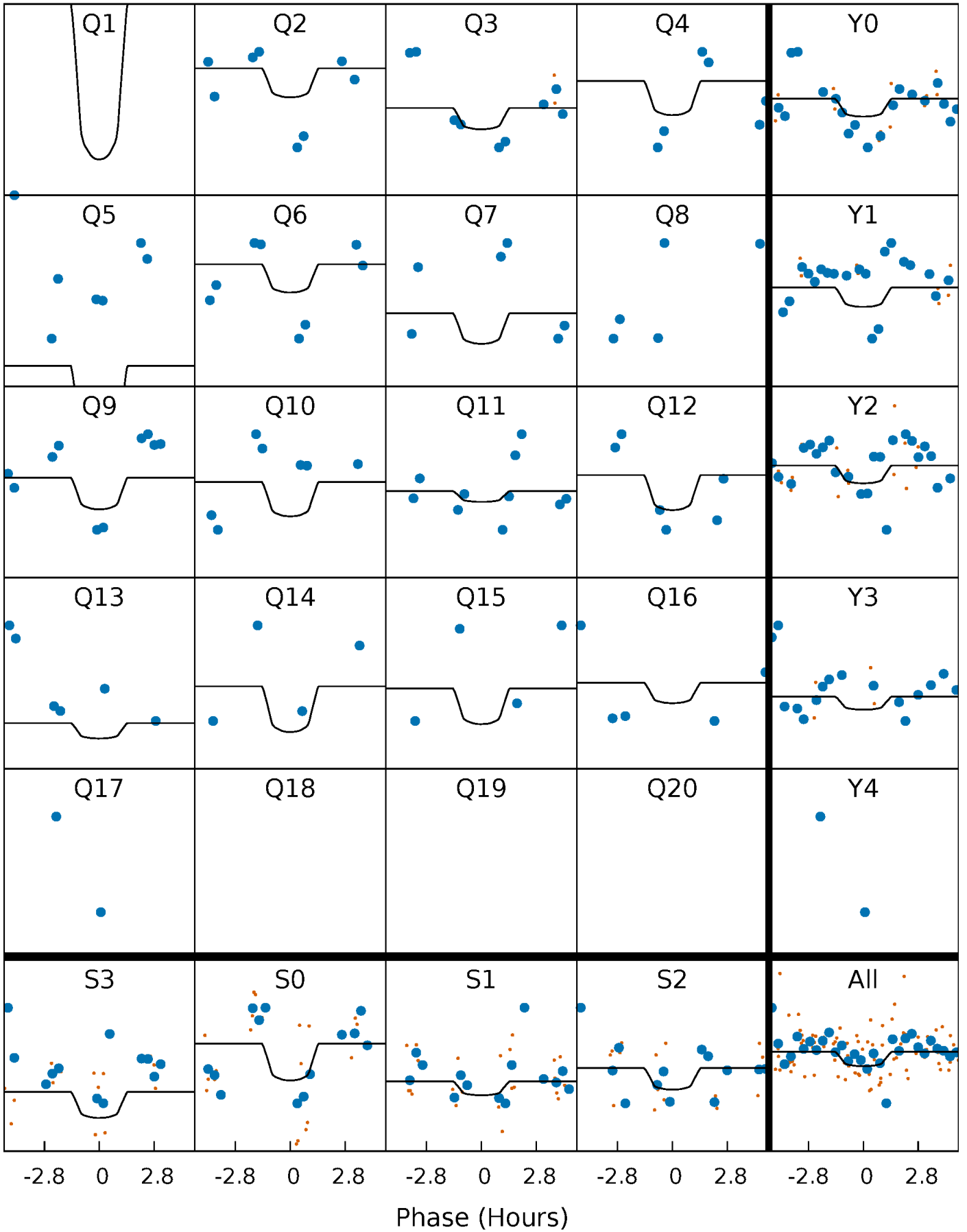
PDC Quarter-Phased Transit Curves

TCE 009881909-05 $P = 17.363529$ Days $T_0 = 139.852949$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 009881909-05 P= 17.363529 Days $T_0=139.852949$ (BKJD)

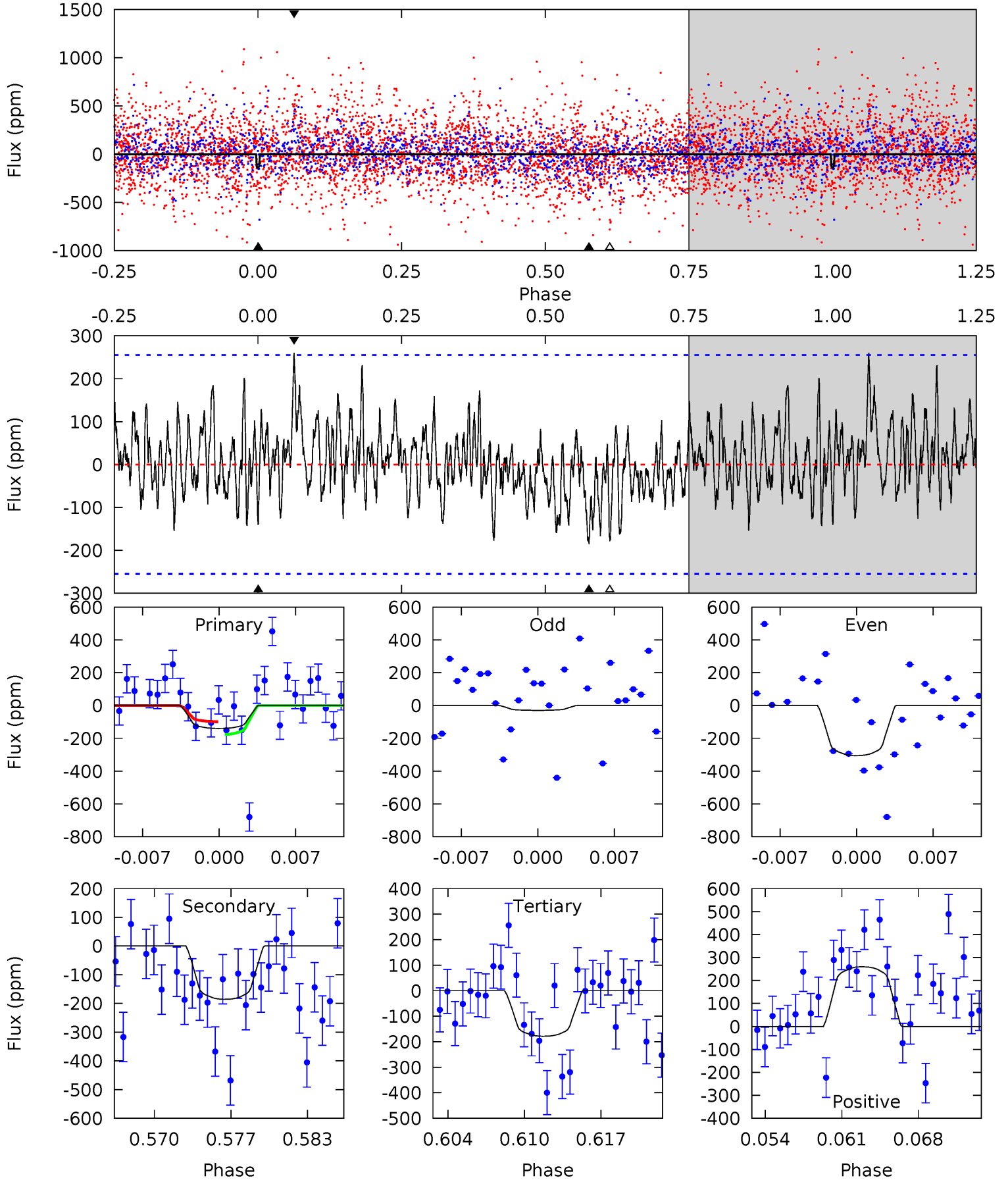


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

009881909-05, $P = 17.363529$ Days, $E = 122.489420$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.81	3.71	3.57	5.20	5.10	2.71	1.37	-0.76	-2.39	0.14	-1.49	2.76	0.73	0.58	0.79



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 009881909

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7103^{+169}_{-253}	$3.837^{+0.367}_{-0.122}$	$-0.160^{+0.250}_{-0.350}$	$2.599^{+0.496}_{-1.156}$	$1.691^{+0.182}_{-0.425}$	$0.136^{+0.432}_{-0.053}$
	+2%/-4%	+10%/-3%	+156%/-219%	+19%/-44%	+11%/-25%	+319%/-39%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 009881909-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-186 ± 50	$5.24^{+5.12}_{-3.51}$	1750^{+131}_{-187}	5754^{+5644}_{-1448}	89^{+705}_{-68}
Alt.	N/A	N/A	N/A	N/A	N/A

T_{max} = Theoretical Maximum Planetary Temperature
 T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)
 A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

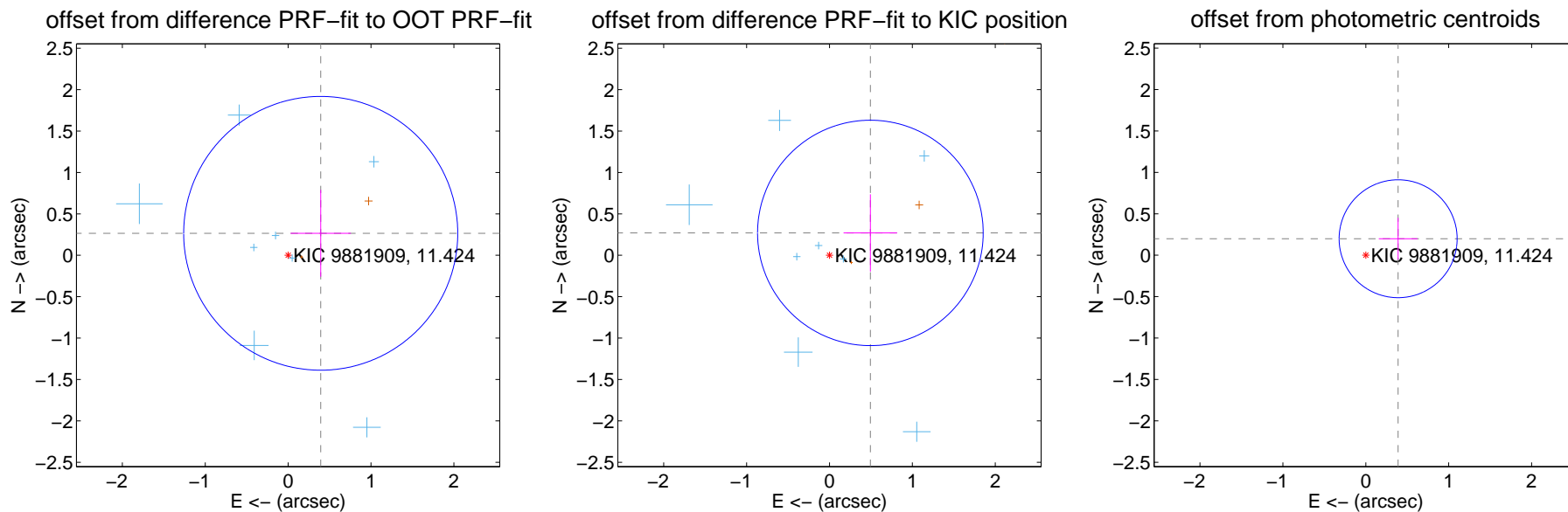
DV Centroid Data

Supplemental centroid analysis for 009881909-05. **Kepler magnitude: 11.42.** Transit SNR 6.14

There are 10 quarters with good PRF difference image offsets

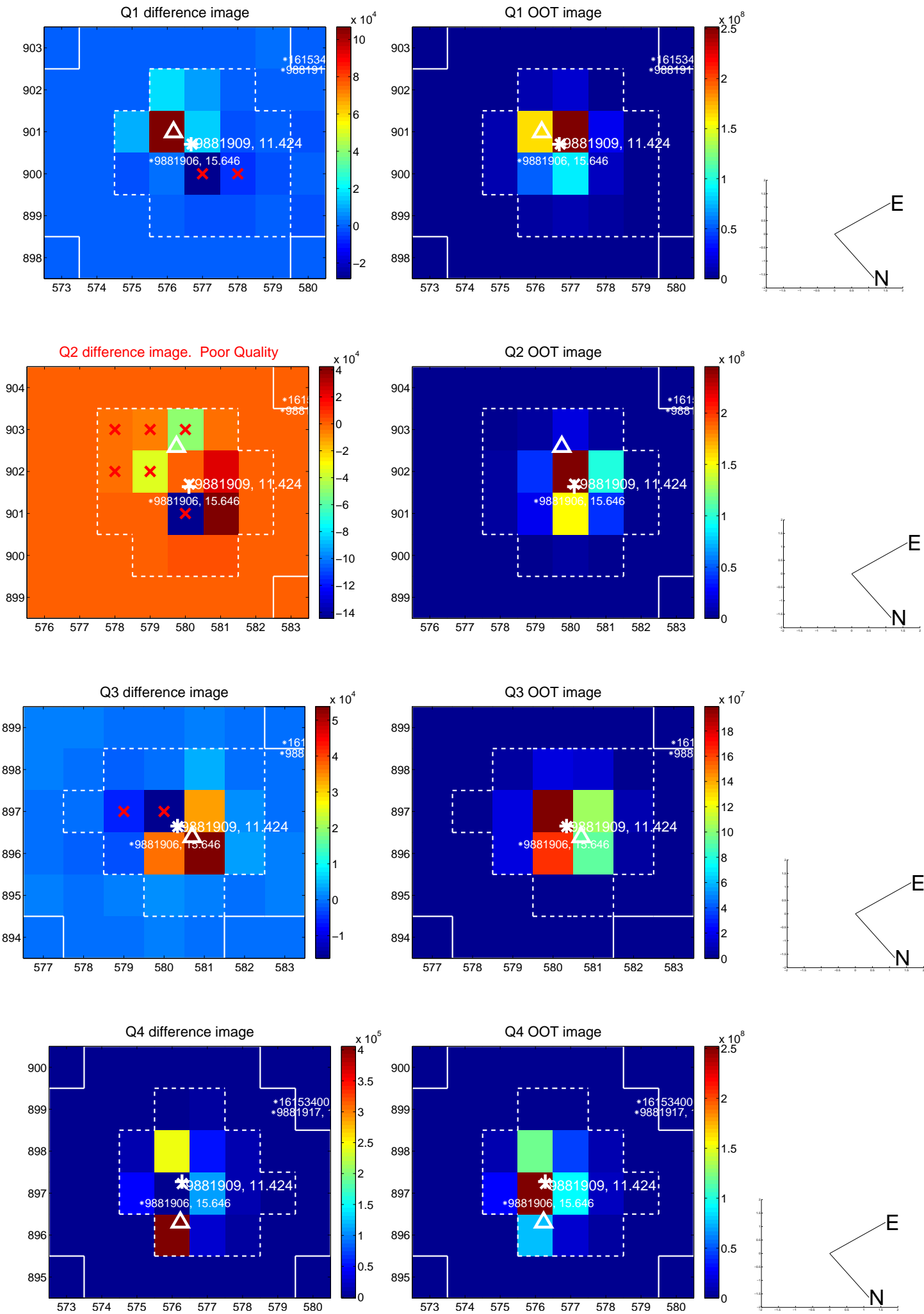
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.474 ± 0.551	0.86	-0.393 ± 0.363	0.265 ± 0.525
PRF-fit source offset from KIC position	0.562 ± 0.454	1.24	-0.493 ± 0.323	0.270 ± 0.466
photometric centroid source offset	0.44 ± 0.24	1.85	-0.39 ± 0.23	0.20 ± 0.25

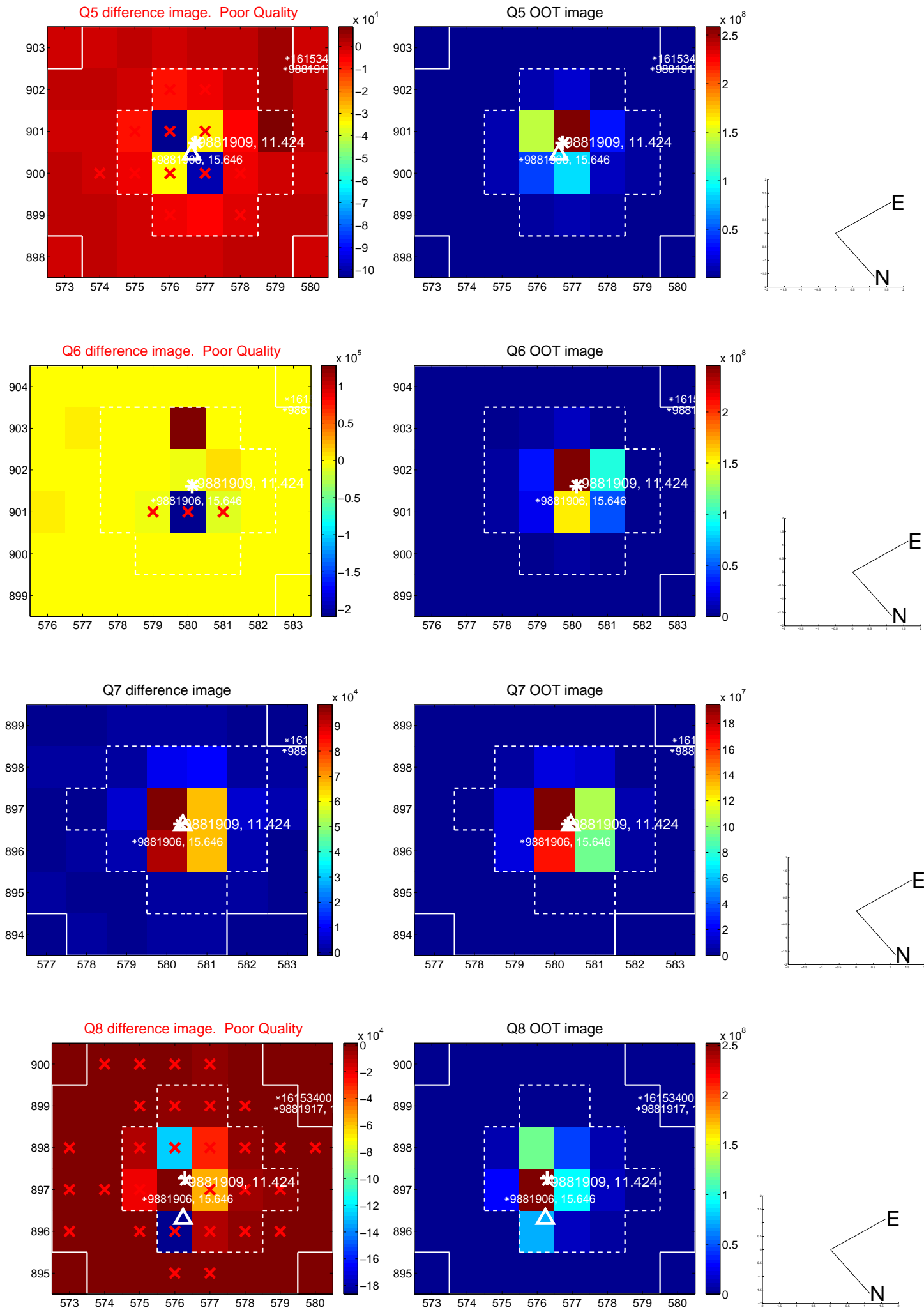


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

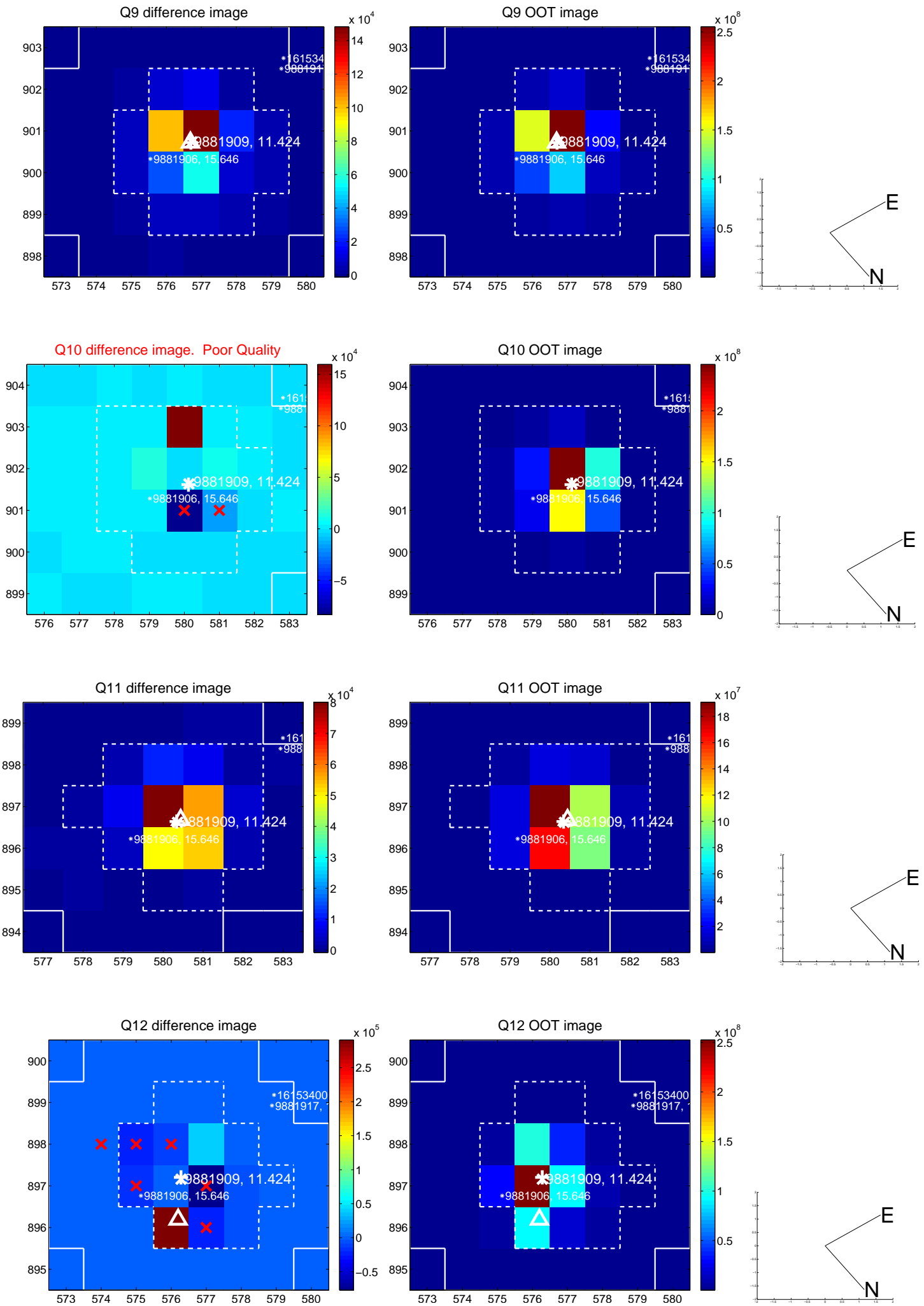
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



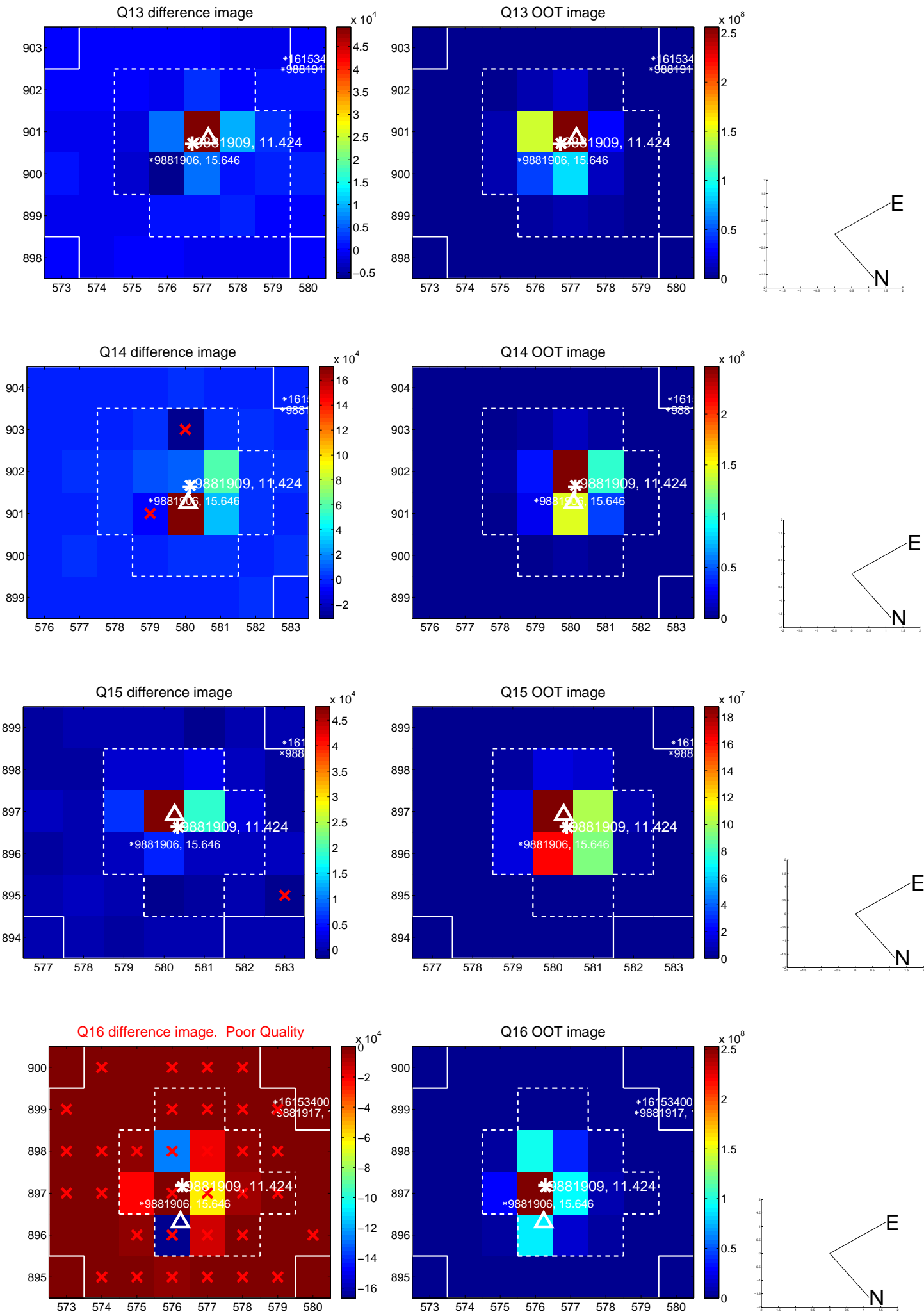
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



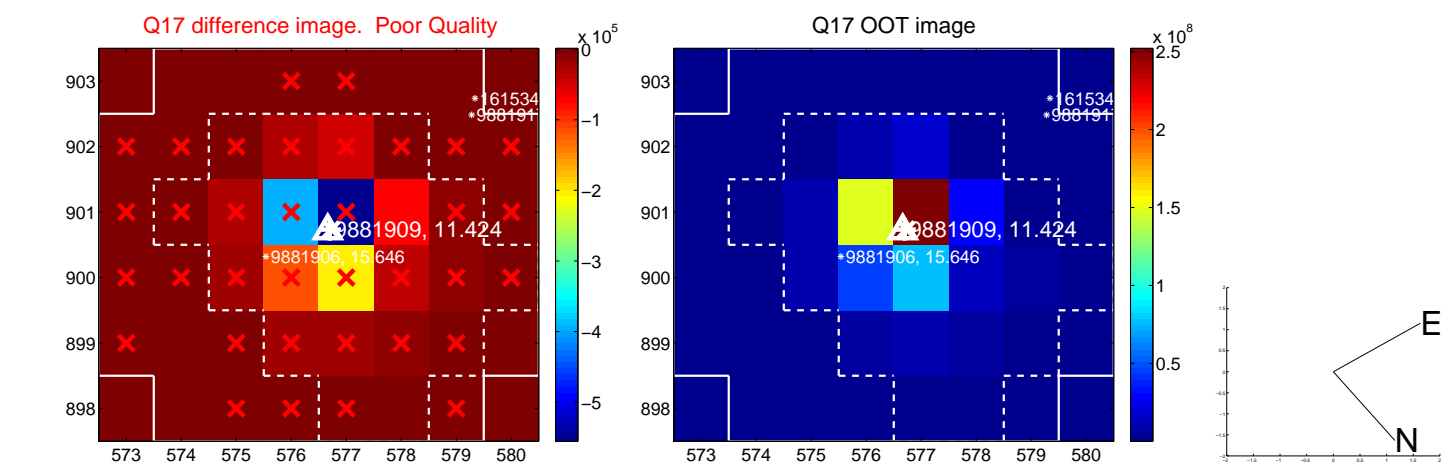
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



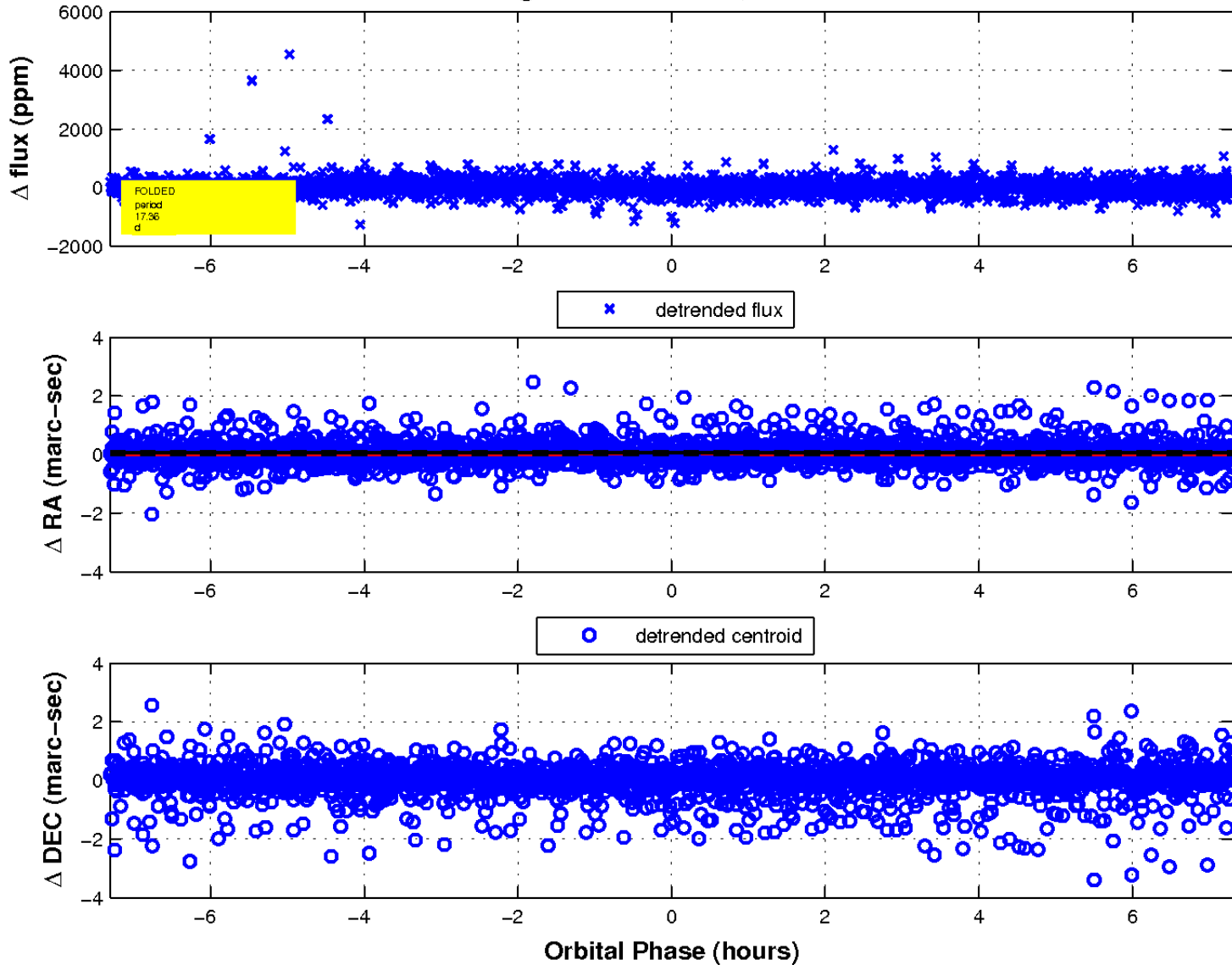
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

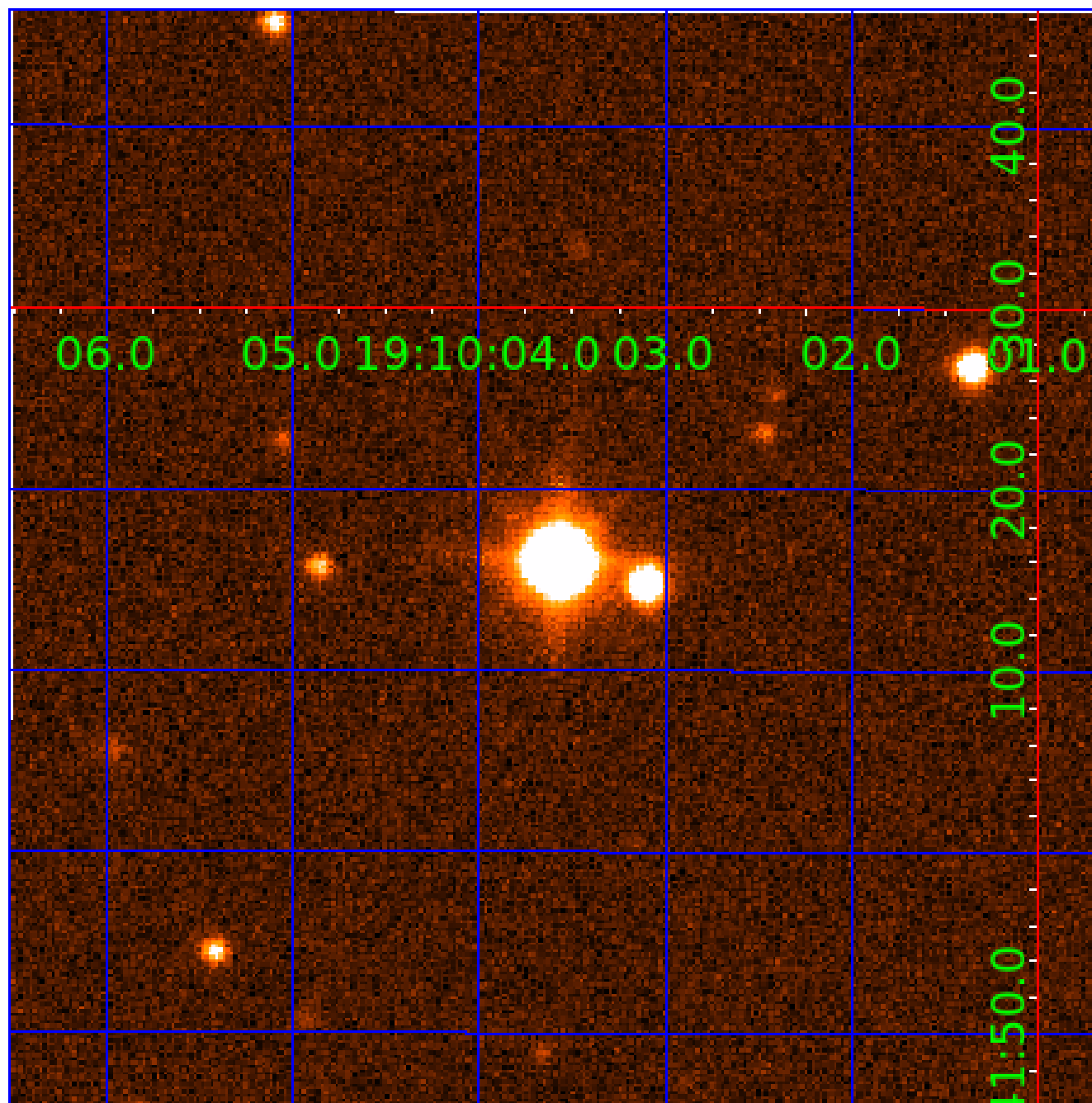


fluxWeightedCentroids, Planet 5 of 6



UKIRT Image

Declination



KIC 009881909

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
009881909-01	OBS	No	0.507848	131.786098	17.8	3.619	10.6	7.9	2.60	7103	1.13	69858.79
009881909-02	OBS	No	18.637909	149.096319	107.3	1.632	10.5	2.9	2.60	7103	3.15	572.80
009881909-03	OBS	No	22.199200	134.663063	518.3	1.166	10.5	10.6	2.60	7103	6.06	453.68
009881909-05	OBS	No	17.363529	139.852949	188.7	2.437	9.6	6.1	2.60	7103	3.85	629.53
009881909-06	OBS	No	17.880135	148.825196	218.6	4.178	10.8	7.3	2.60	7103	4.41	605.39

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009881909-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
009881909-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
009881909-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—CENT_SATURATED
009881909-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_SATURATED
009881909-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

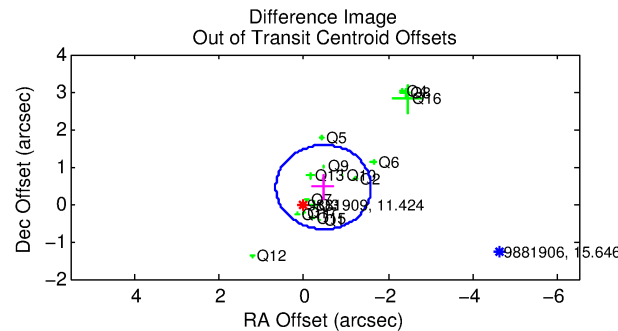
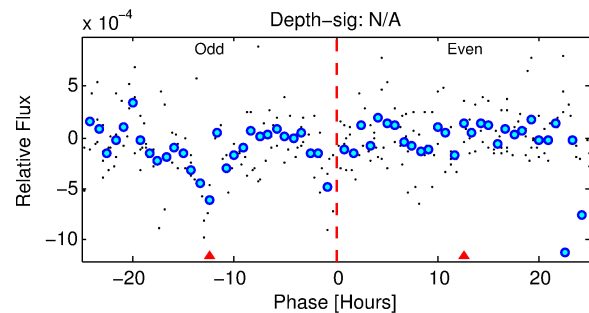
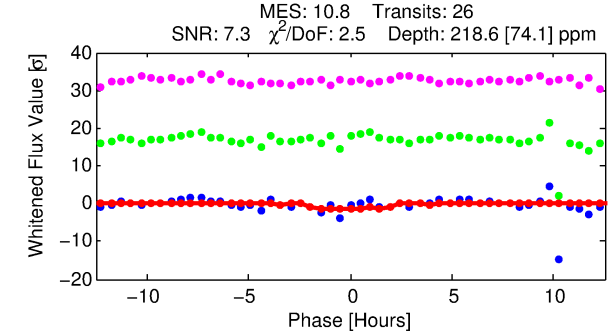
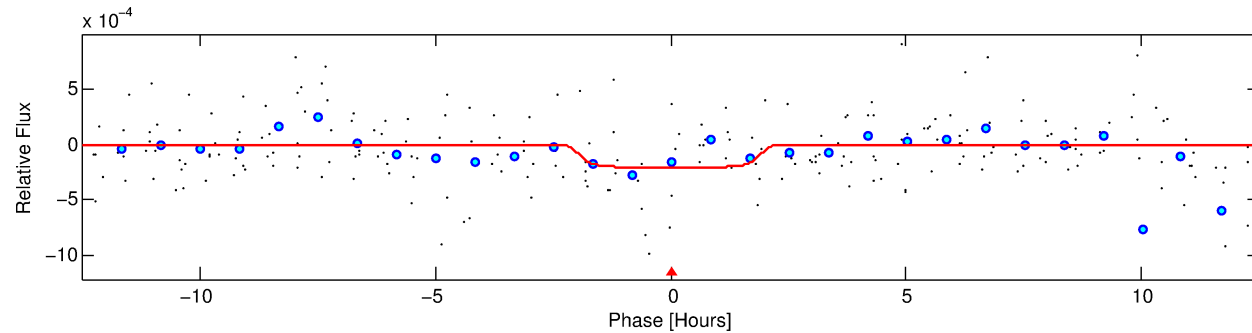
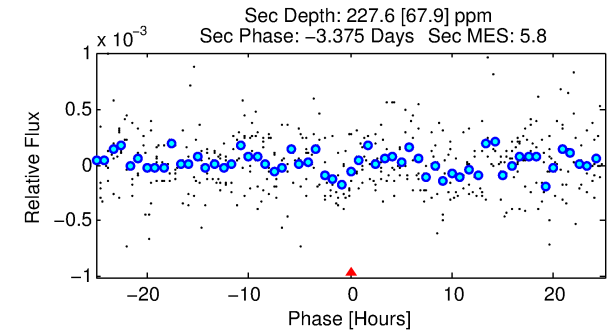
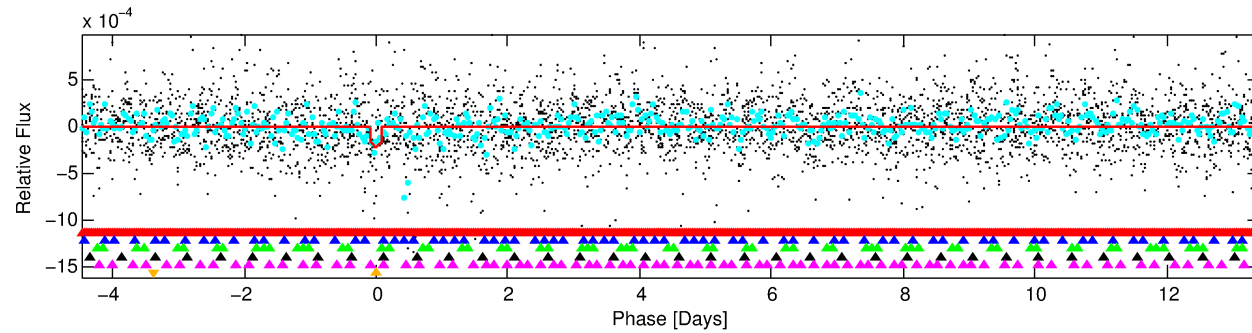
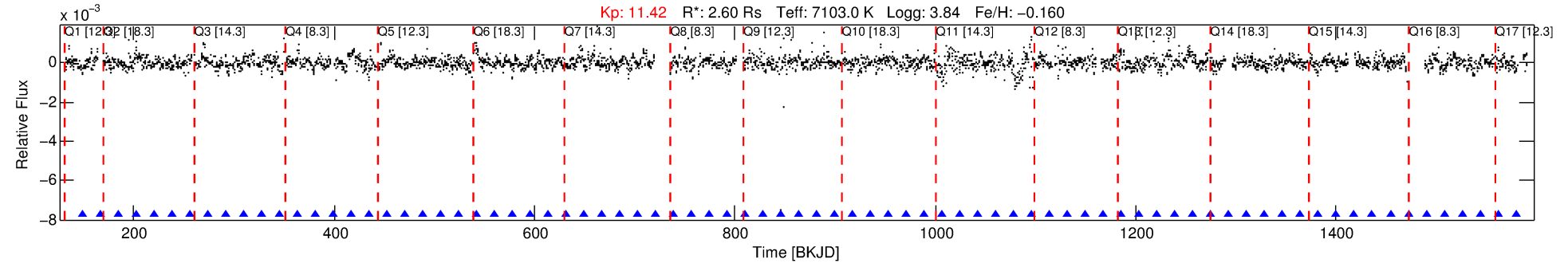
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009881909-06

No Significant Match Found

DV One-Page Summary

KIC: 9881909 Candidate: 6 of 6 Period: 17.880 d



DV Fit Results:

Period = 17.88014 [0.00050] d
Epoch = 148.8252 [0.0201] BKJD
Rp/R* = 0.0155 [0.0208]
a/R* = 16.84 [132.94]
b = 0.88 [2.11]
Seff = 605.39 [394.95]
Teq = 1265 [206] K
Rp = 4.41 [6.22] Re
a = 0.1595 [0.0652] AU
Ag = 163.95 [453.94] [0.36 σ]
Teffp = 6998 [4721] K [1.21 σ]

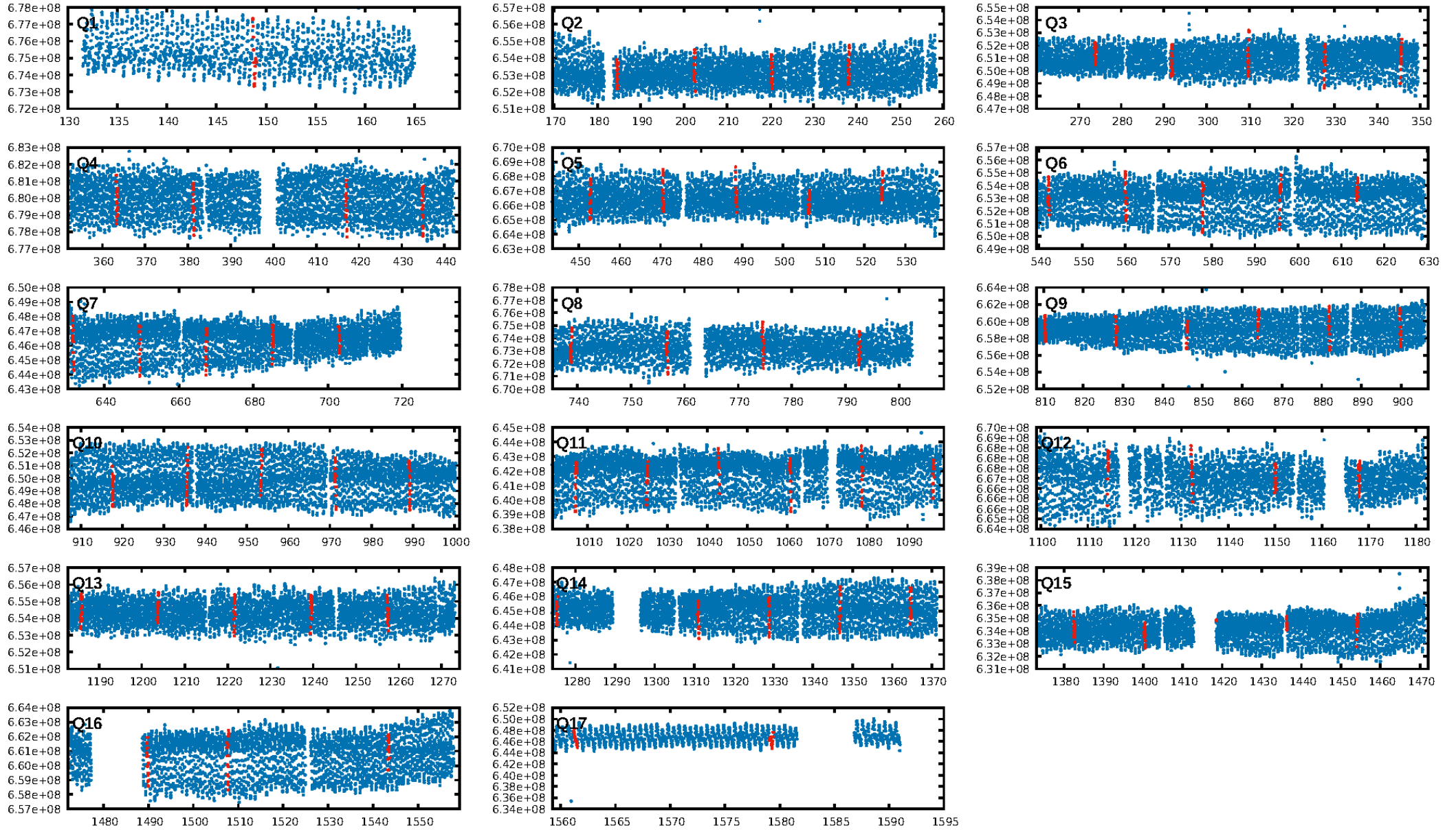
DV Diagnostic Results:

ShortPeriod-sig: 99.0% [2.56 σ]
LongPeriod-sig: 100.0% [4.05 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.82e-09
RollingBand-fgt: 1.00 [25/25]
GhostDiagnostic-chr: 0.3807
Centroid-sig: N/A
Centroid-so: 0.115 arcsec [0.64 σ]
OotOffset-rm: 0.654 arcsec [1.74 σ]
KicOffset-rm: 0.719 arcsec [1.94 σ]
OotOffset-st: 3/4/4/5 [16]
KicOffset-st: 3/4/4/5 [16]
DiffImageQuality-fgm: 0.44 [7/16]
DiffImageOverlap-fno: 0.00 [0/17]

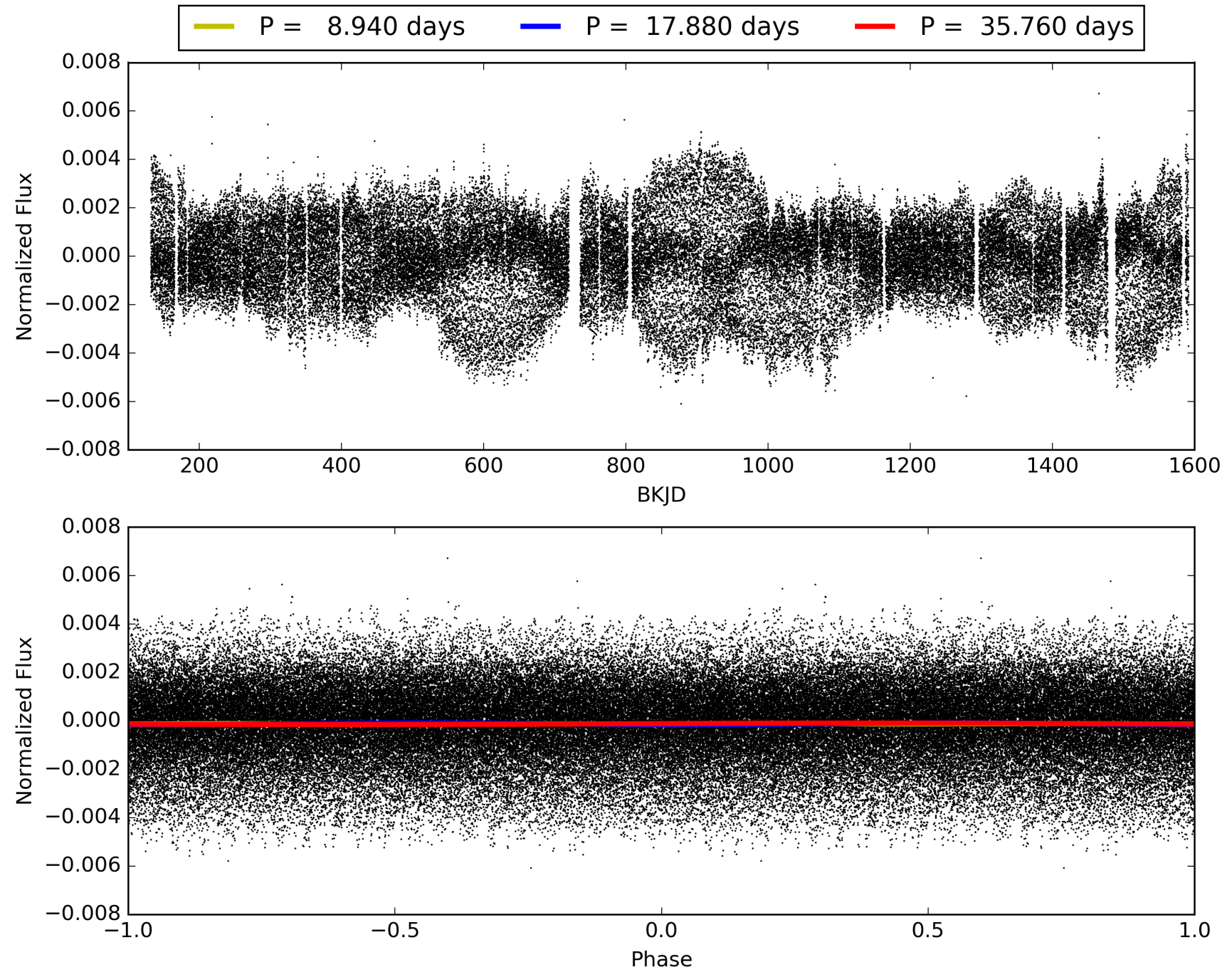
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:23:52 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009881909-06, PDC Light Curves

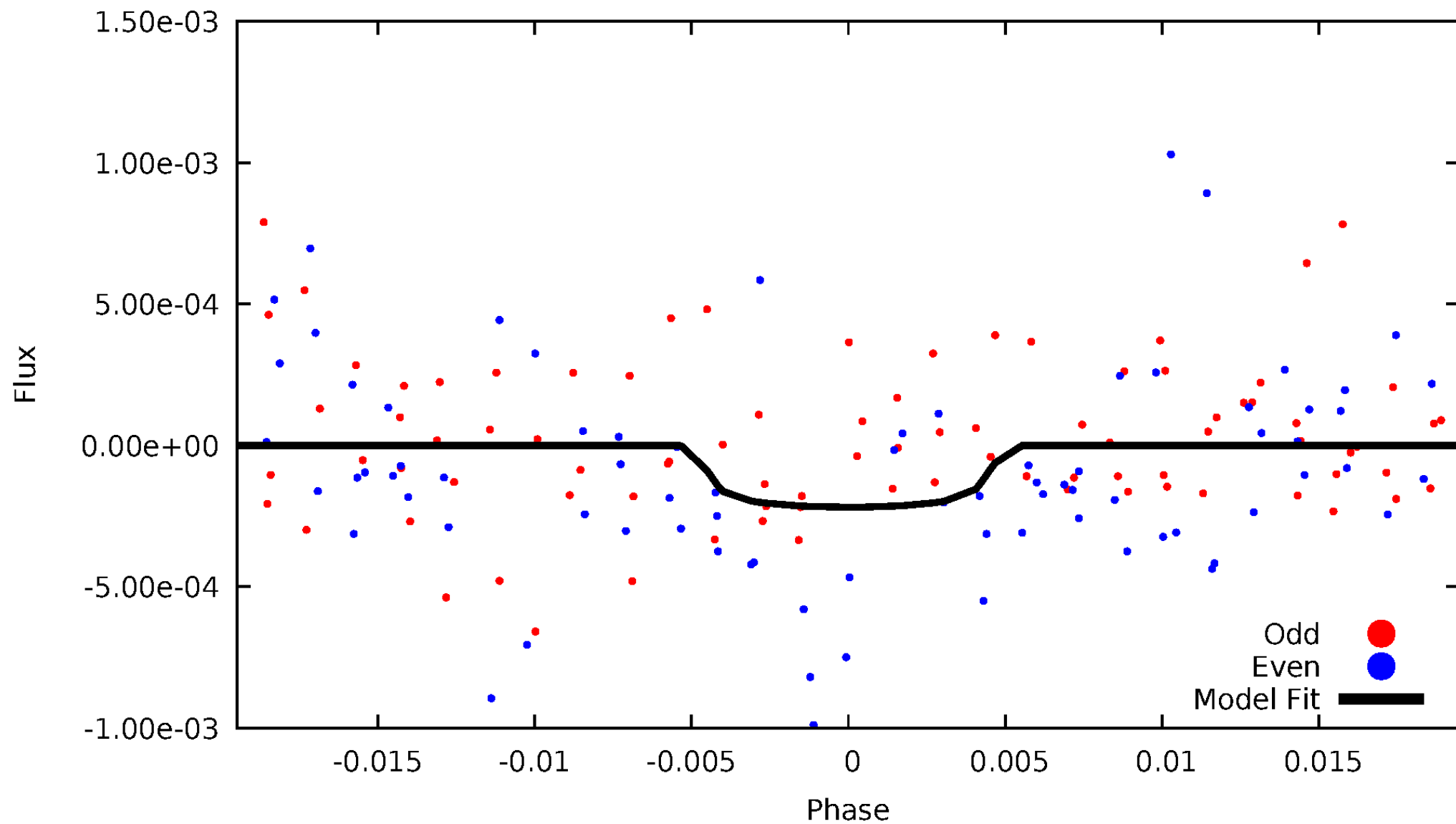


TCE 009881909-06



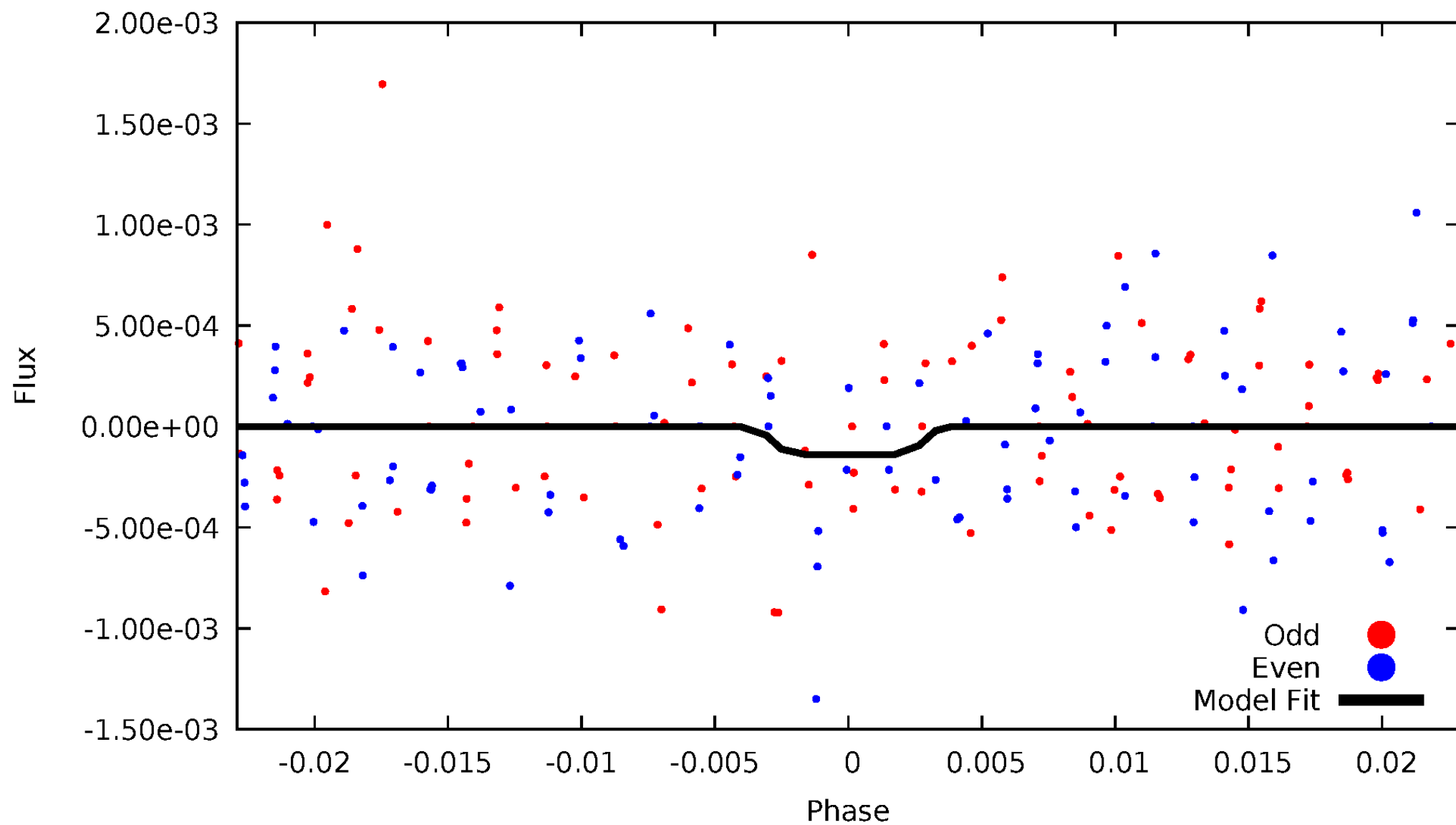
DV Odd/Even

TCE 009881909-06



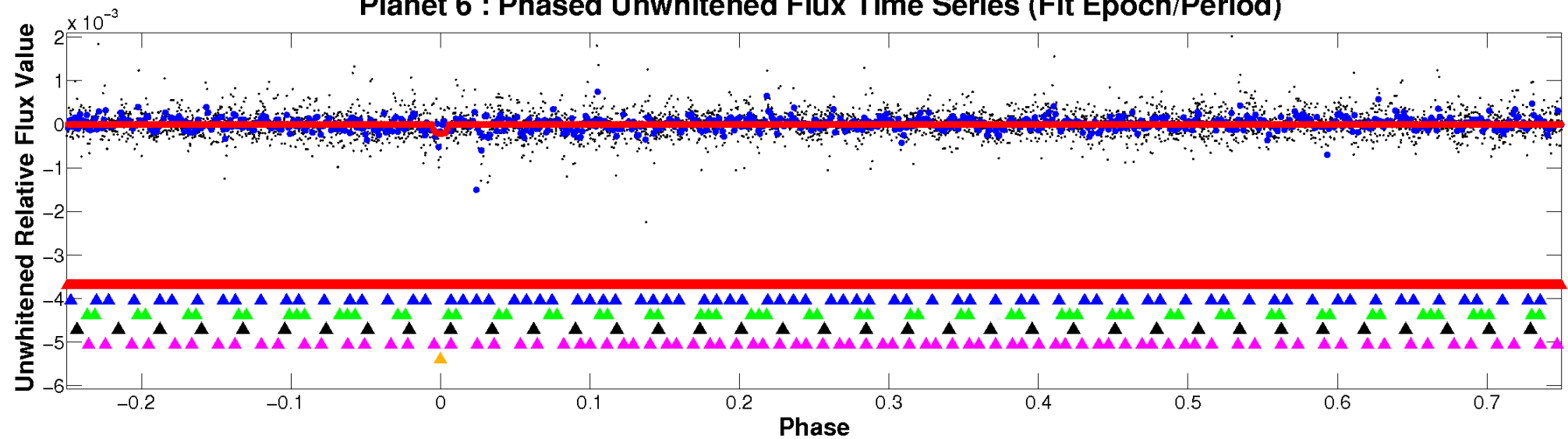
ALT Odd/Even

TCE 009881909-06

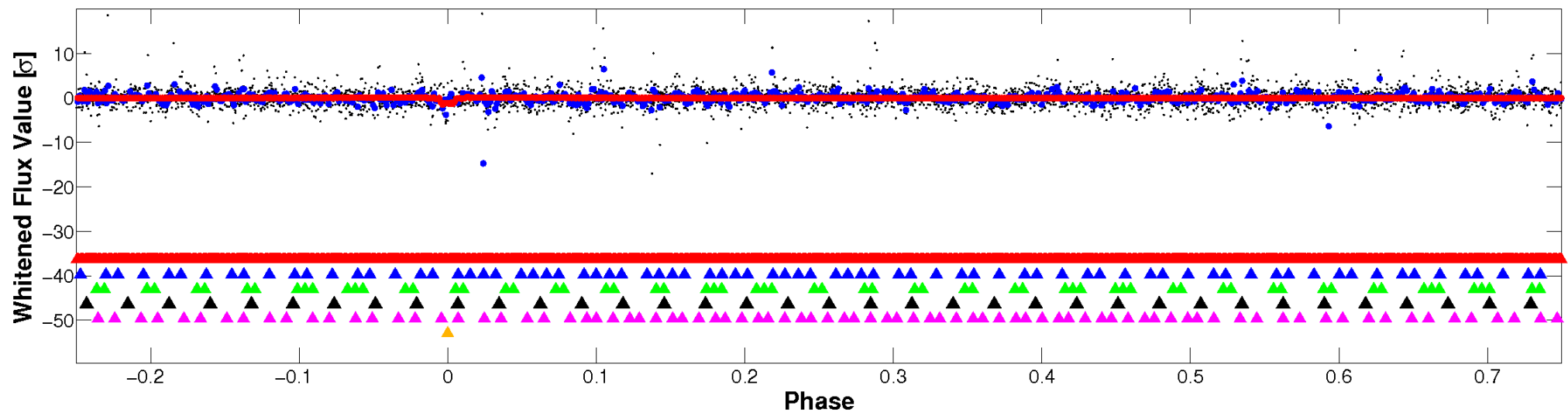


Non-Whitened Vs. Whitened Light Curve

Planet 6 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

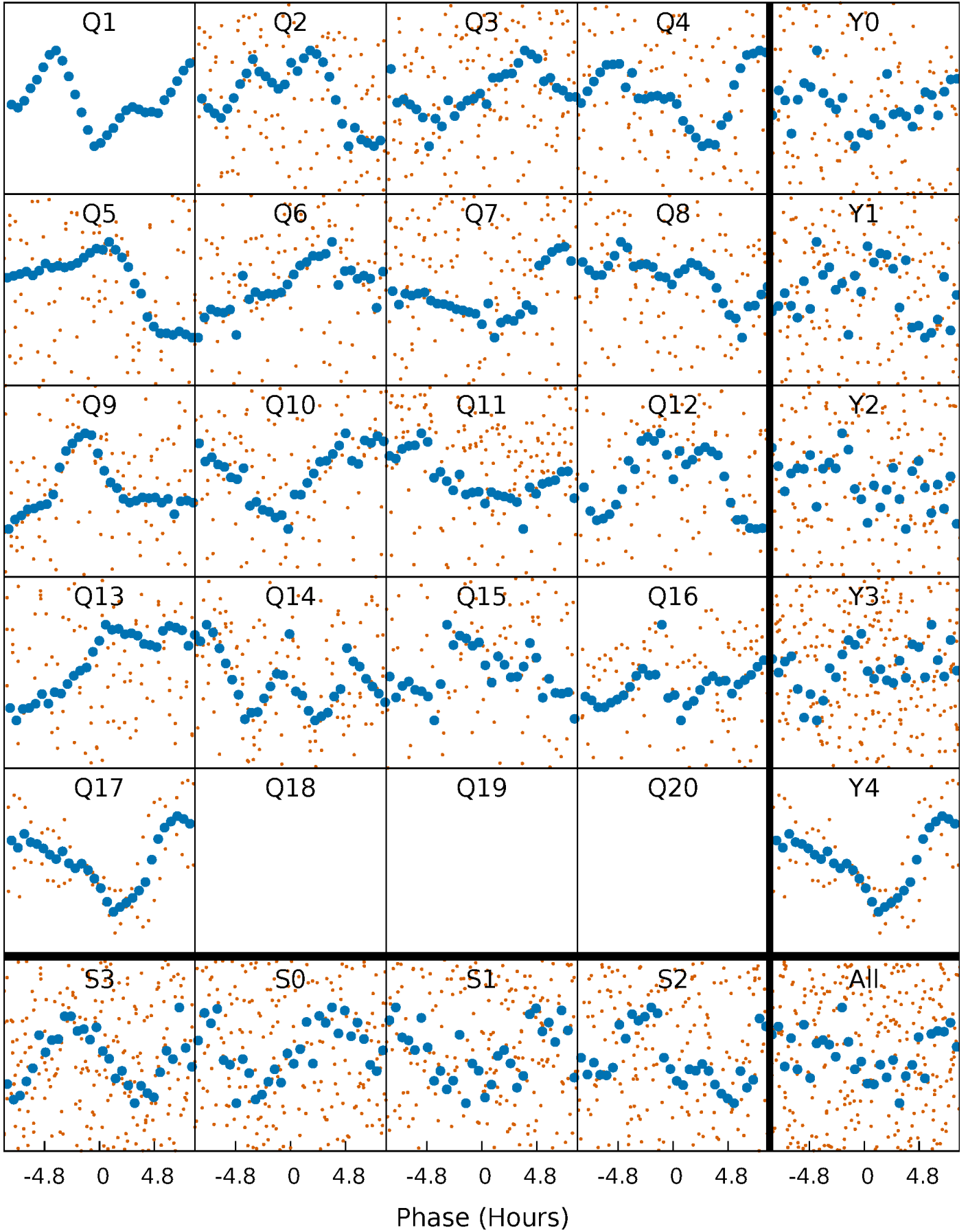


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



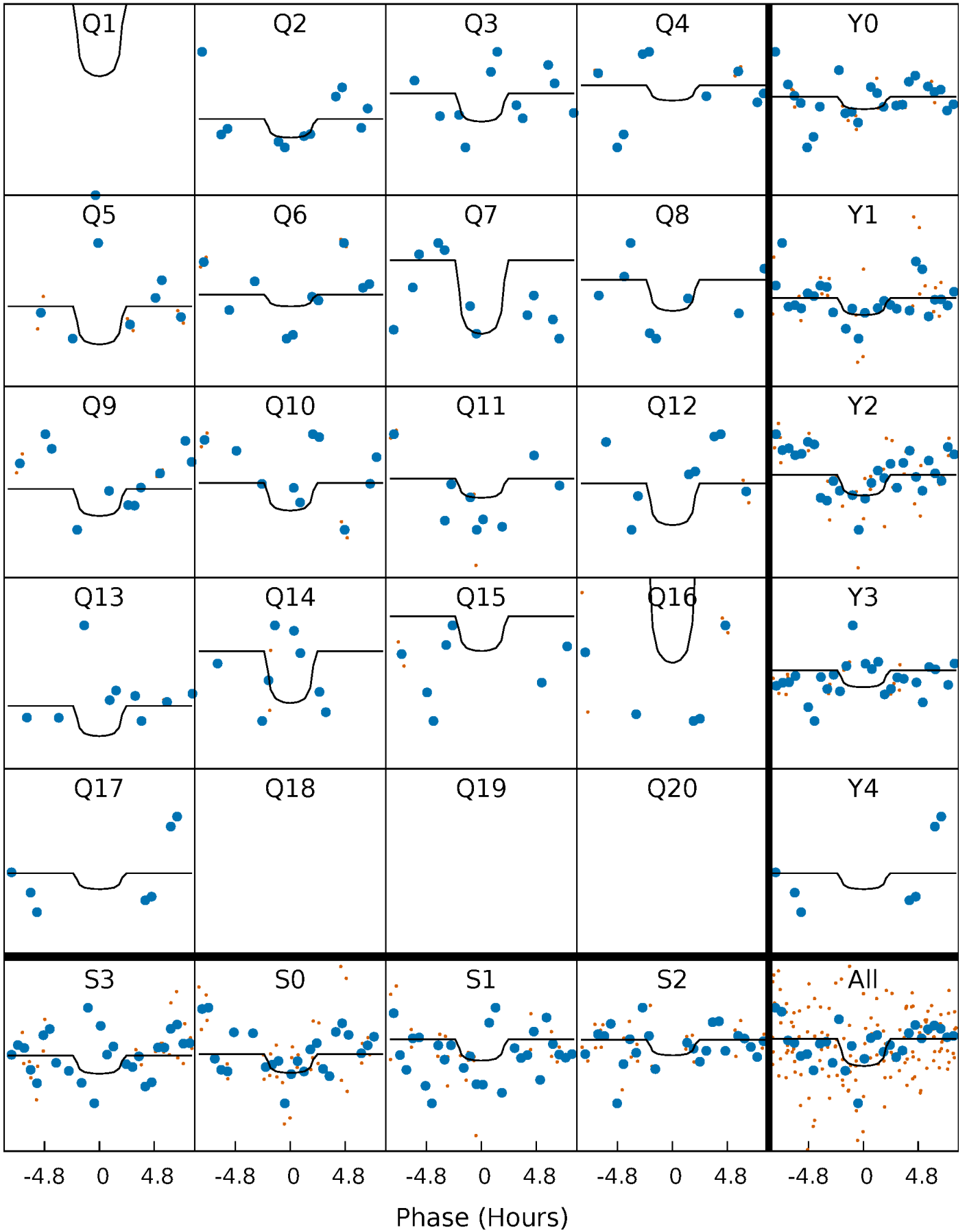
PDC Quarter-Phased Transit Curves

TCE 009881909-06 P= 17.880135 Days $T_0=148.825196$ (BKJD)



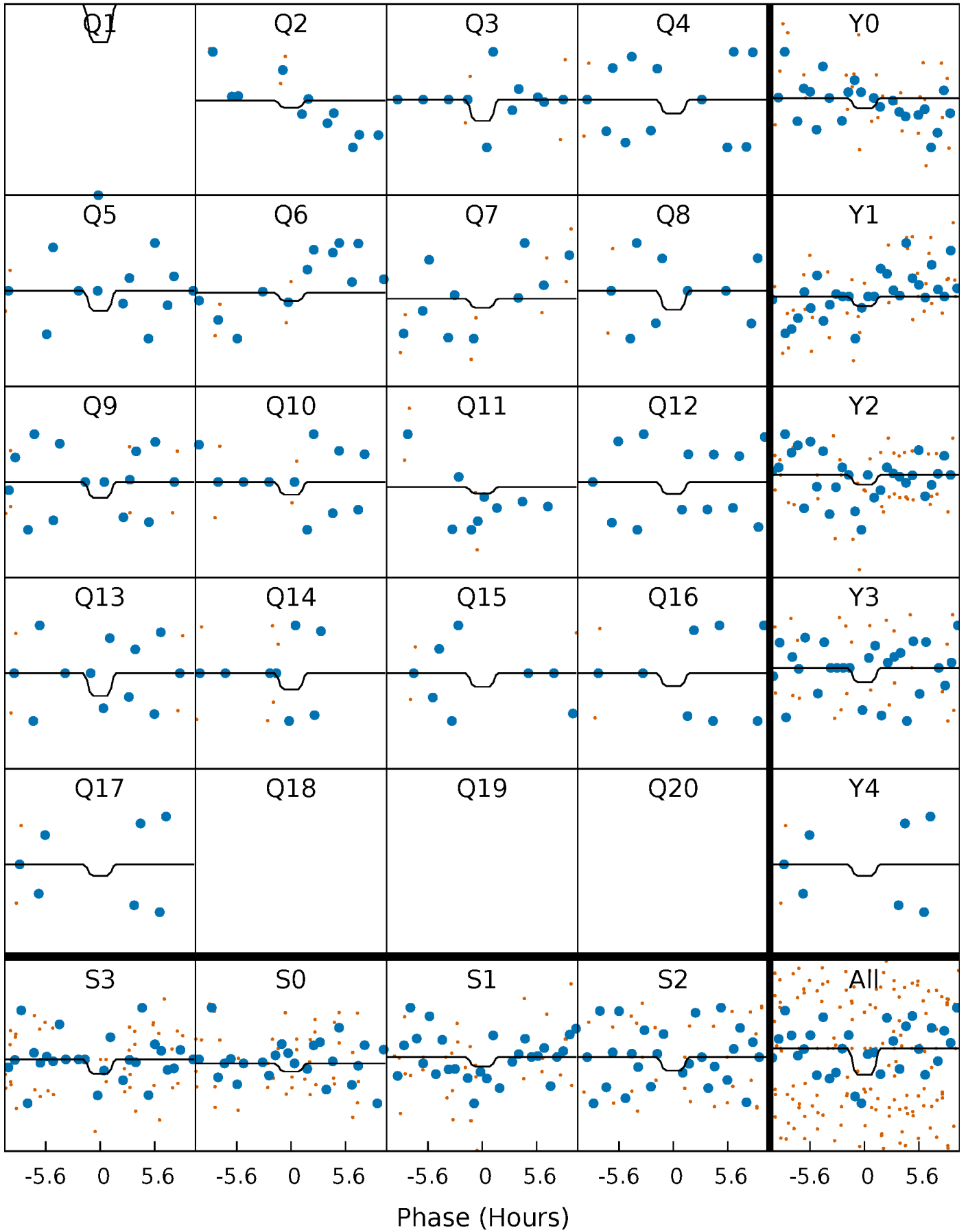
DV Quarter-Phased Transit Curves

TCE 009881909-06 P= 17.880135 Days $T_0=148.825196$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

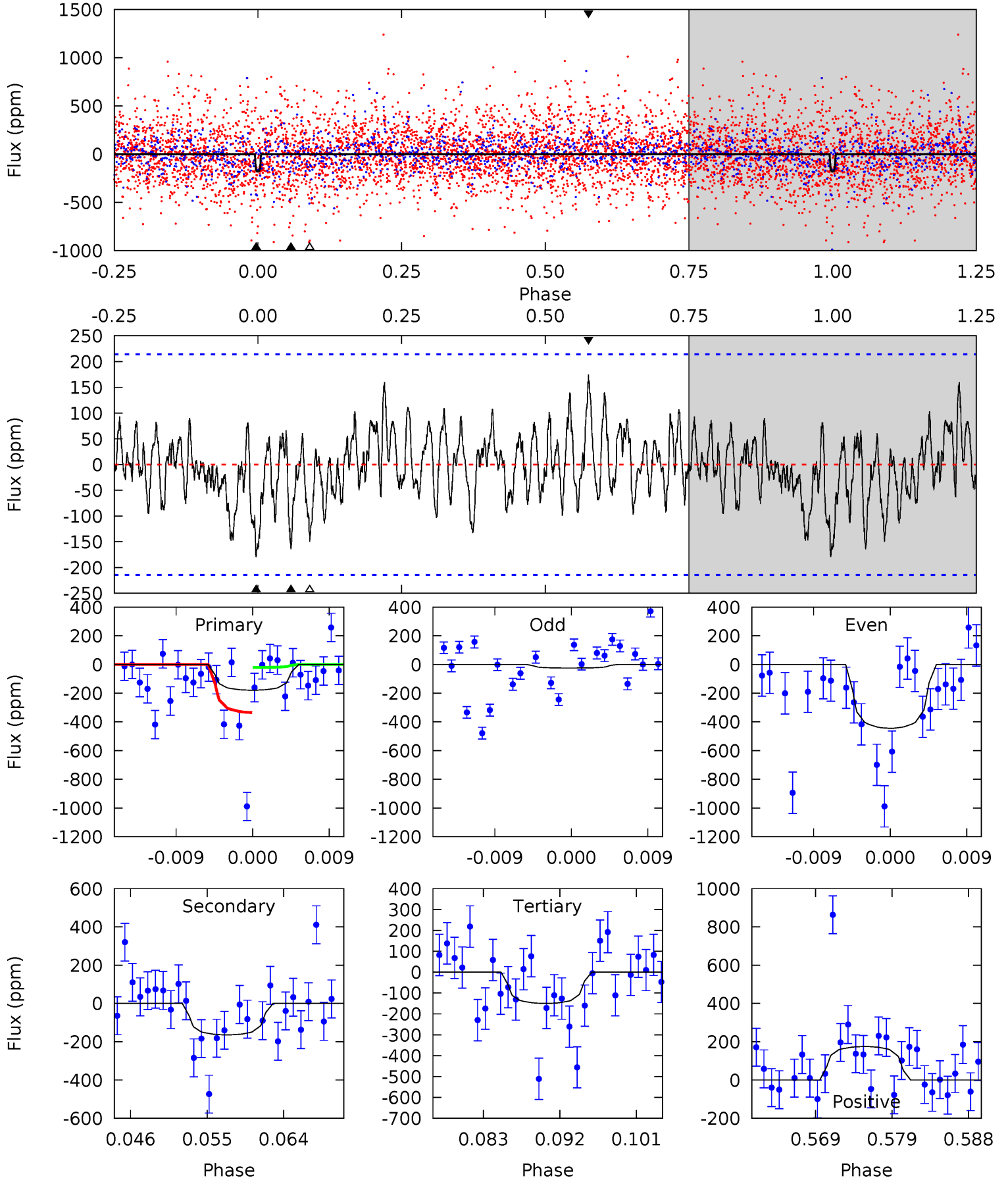
TCE 009881909-06 P= 17.880272 Days $T_0=148.820489$ (BKJD)



DV Model-Shift Uniqueness Test

009881909-06, P = 17.880135 Days, E = 130.945061 Days

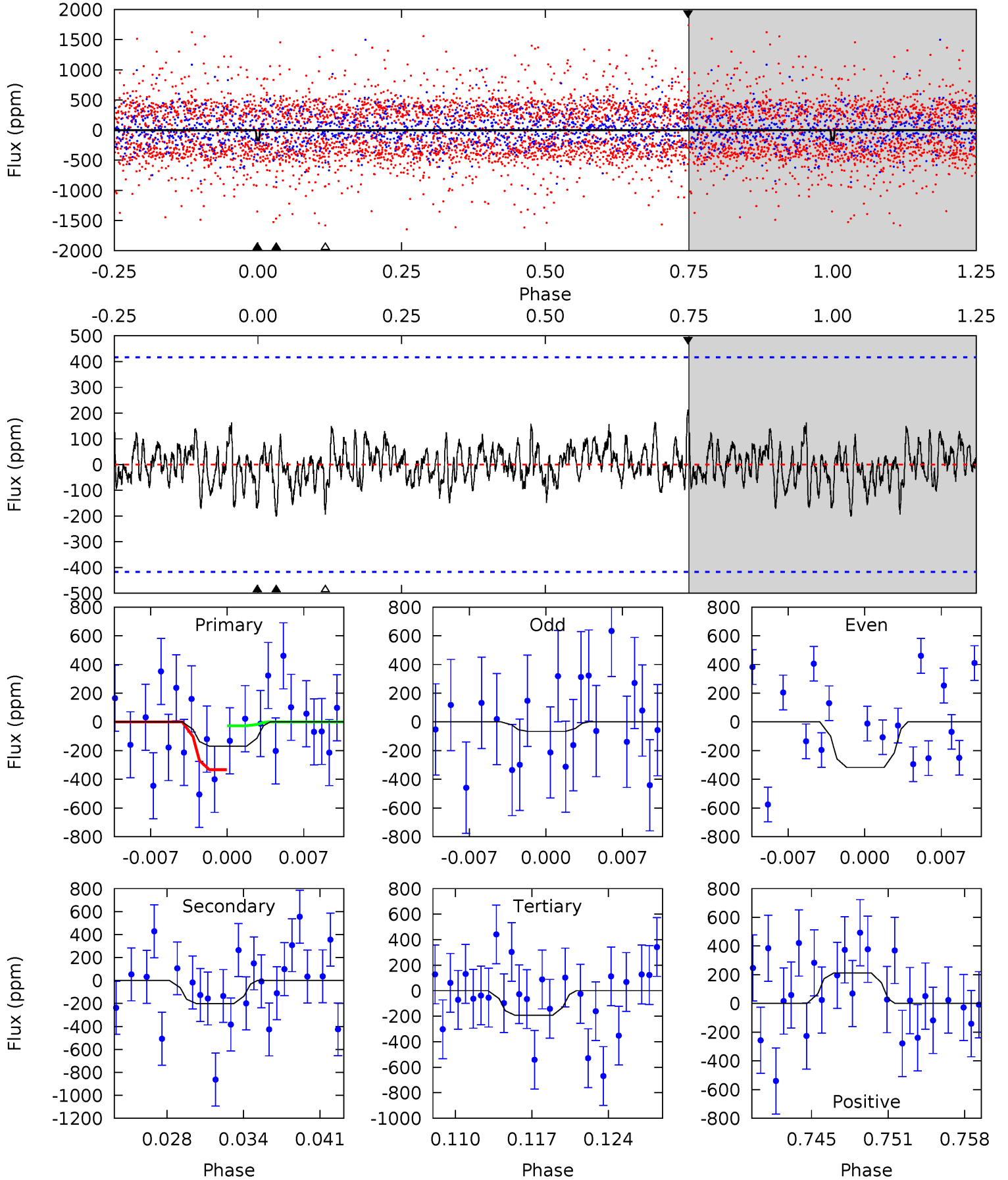
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.22	3.87	3.53	4.12	5.04	2.61	1.31	0.69	0.10	0.34	-0.25	4.72	1.09	0.49	3.73



Alt Model-Shift Uniqueness Test

009881909-06, P = 17.880272 Days, E = 130.940217 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.07	2.46	2.37	2.60	5.10	2.70	0.75	-0.30	-0.53	0.09	-0.14	1.50	1.31	0.51	1.88



Stellar Parameters For KIC 009881909

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7103^{+169}_{-253}	$3.837^{+0.367}_{-0.122}$	$-0.160^{+0.250}_{-0.350}$	$2.599^{+0.496}_{-1.156}$	$1.691^{+0.182}_{-0.425}$	$0.136^{+0.432}_{-0.053}$
	+2%/-4%	+10%/-3%	+156%/-219%	+19%/-44%	+11%/-25%	+319%/-39%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 009881909-06 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-164 ± 42	$5.66^{+4.77}_{-3.49}$	1730^{+116}_{-189}	5364^{+3859}_{-1217}	69^{+396}_{-50}
Alt.	-201 ± 82	$5.05^{+5.21}_{-3.42}$	1738^{+114}_{-182}	5866^{+6013}_{-1516}	97^{+885}_{-74}

T_{max} = Theoretical Maximum Planetary Temperature
 T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)
 A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

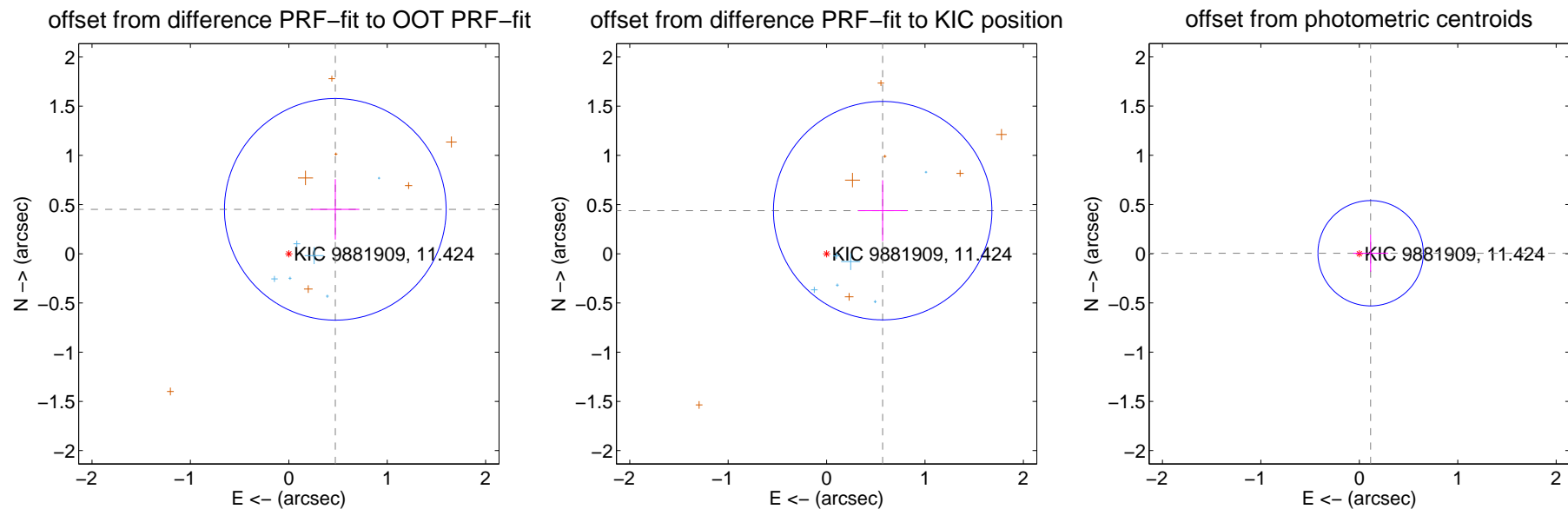
DV Centroid Data

Supplemental centroid analysis for 009881909-06. **Kepler magnitude: 11.42.** Transit SNR 7.28

There are 7 quarters with good PRF difference image offsets

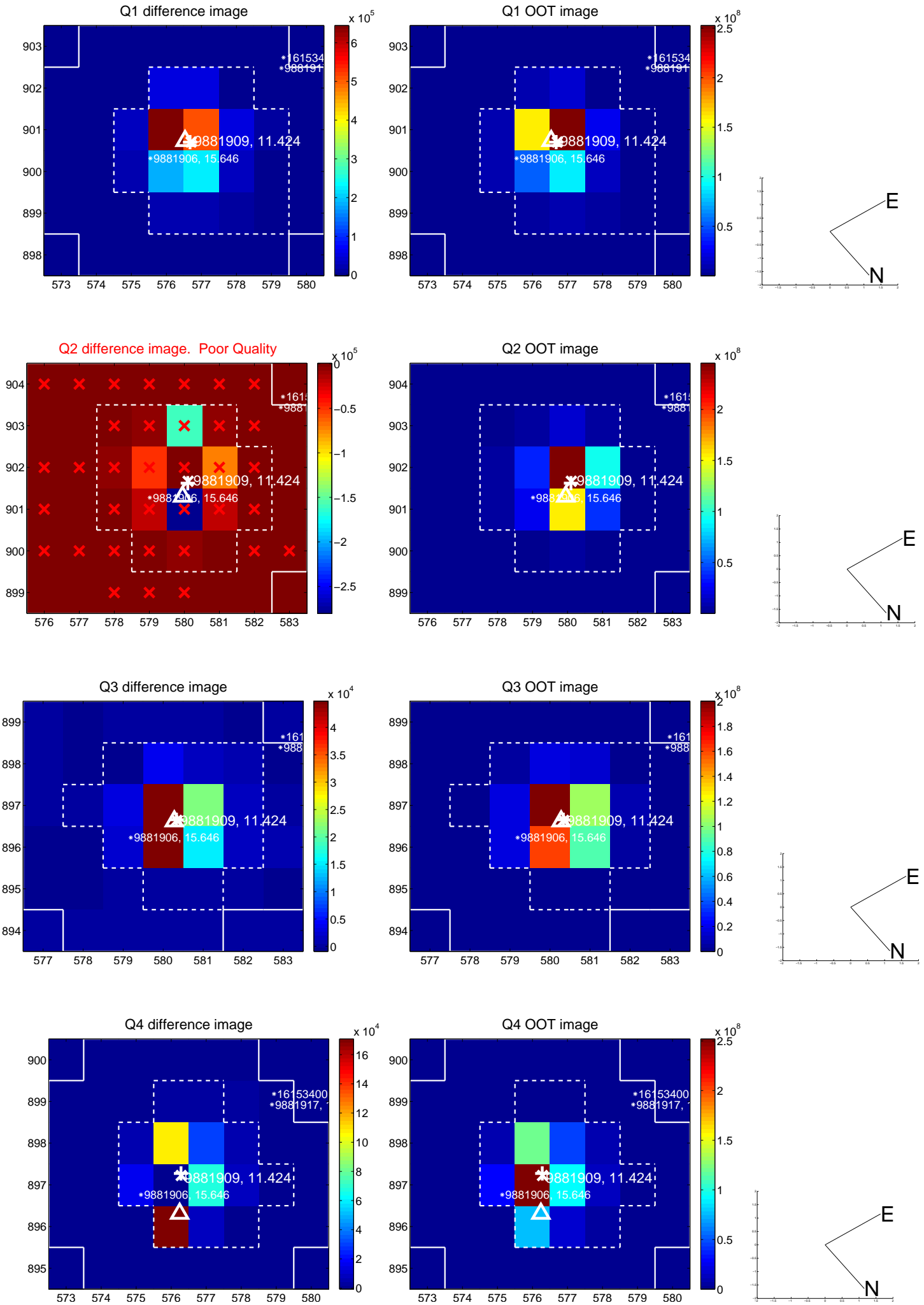
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.654 ± 0.375	1.74	-0.472 ± 0.245	0.452 ± 0.307
PRF-fit source offset from KIC position	0.719 ± 0.370	1.94	-0.570 ± 0.248	0.438 ± 0.309
photometric centroid source offset	0.11 ± 0.18	0.64	-0.11 ± 0.18	0.00 ± 0.19

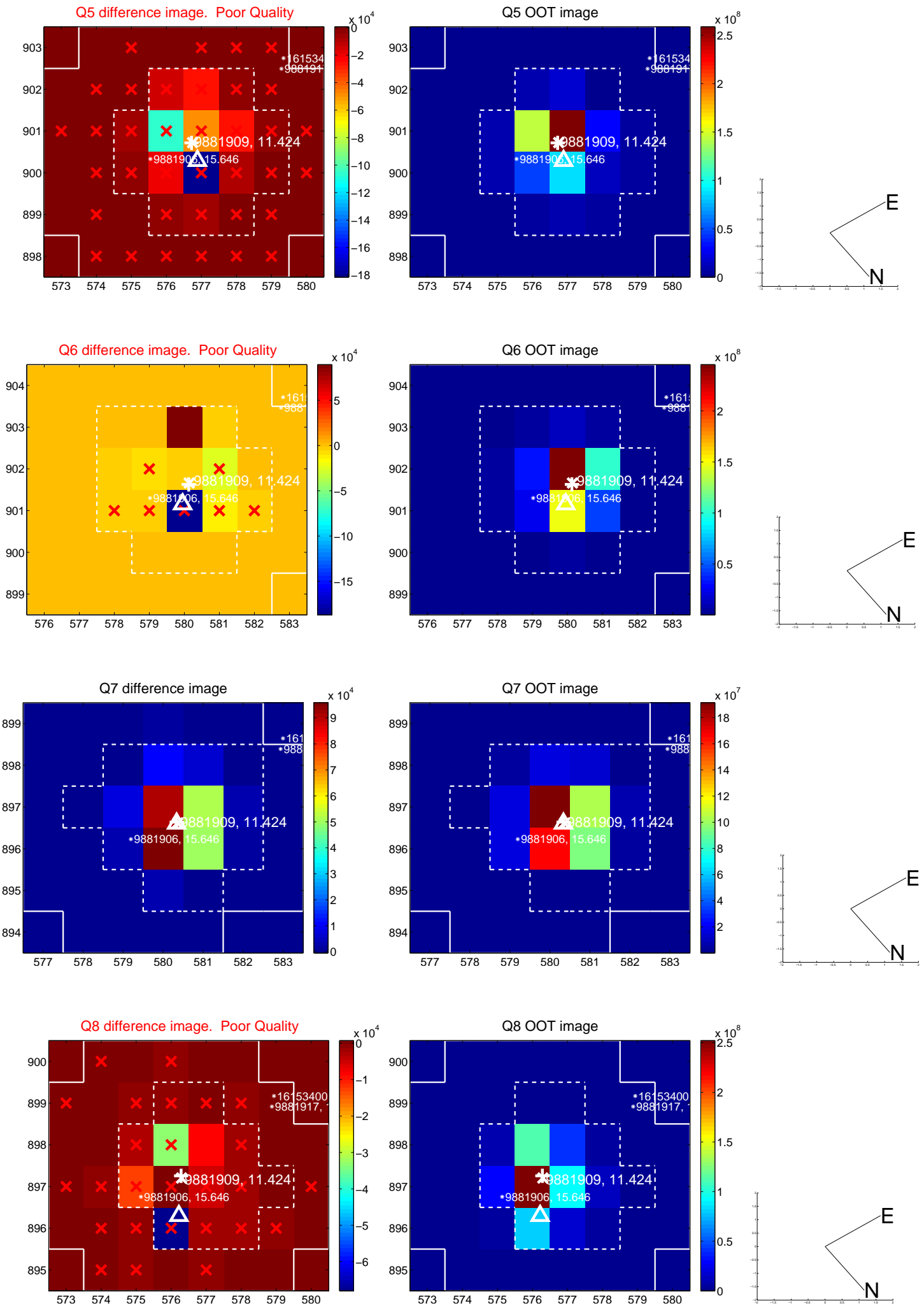


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

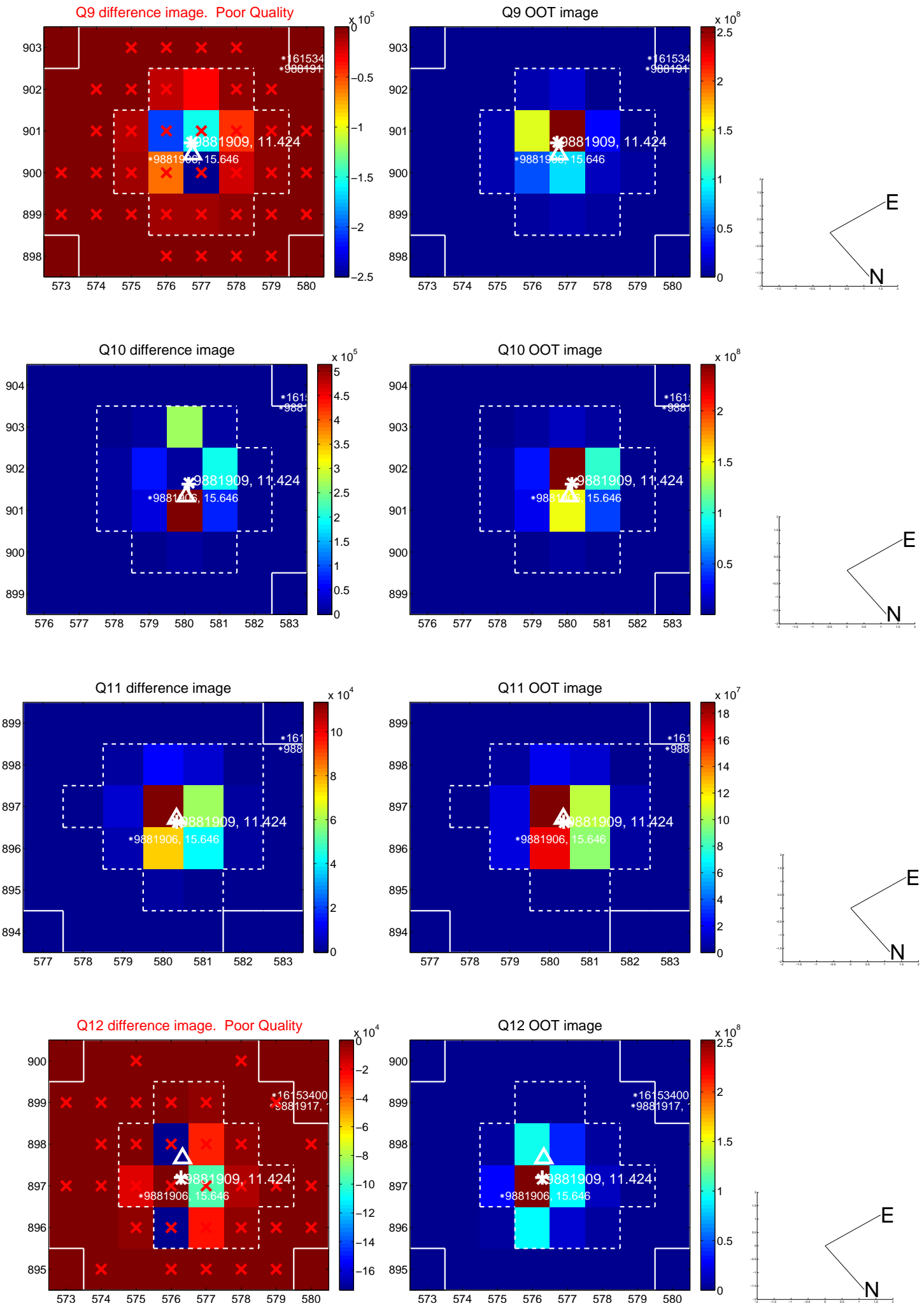
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



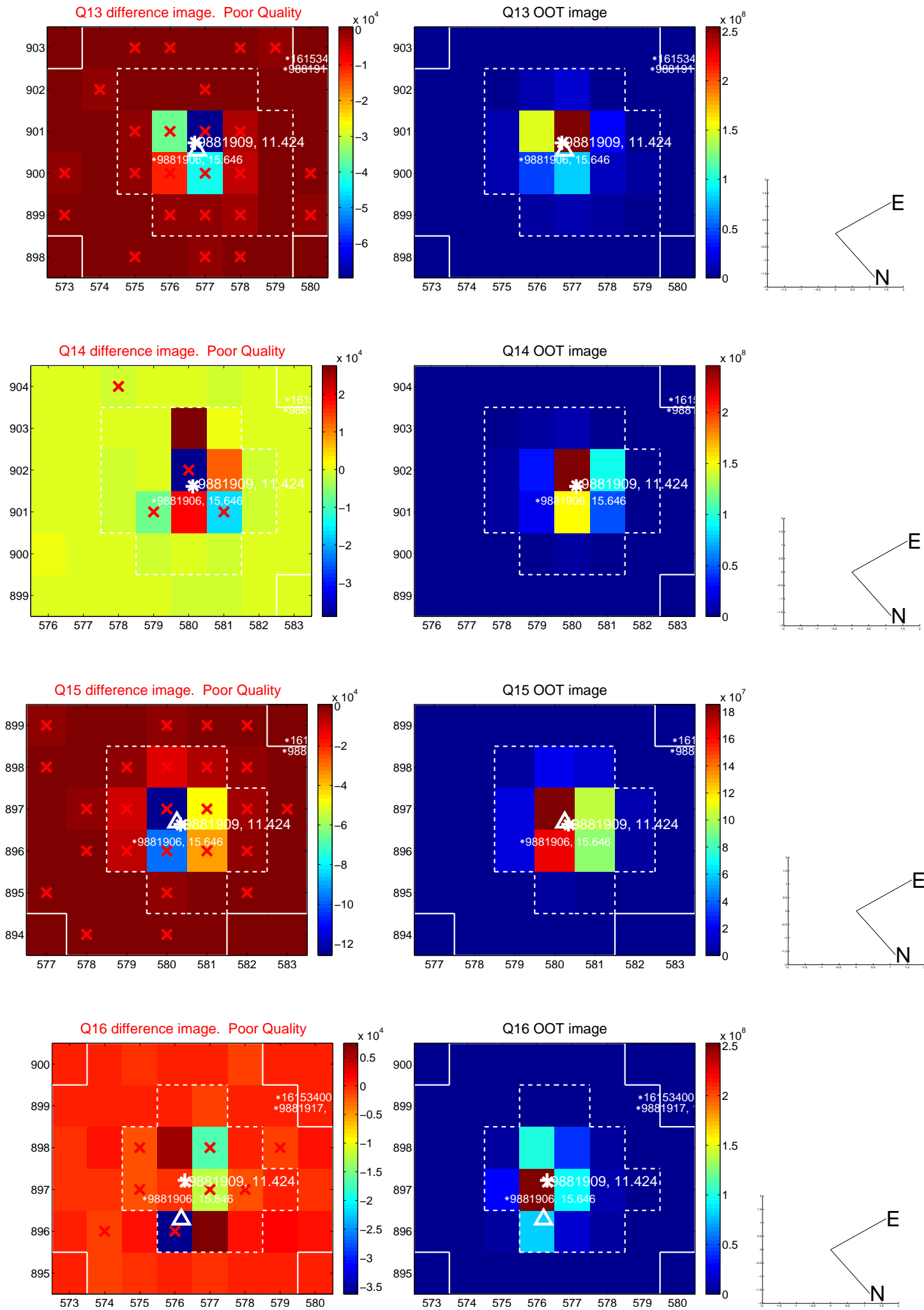
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



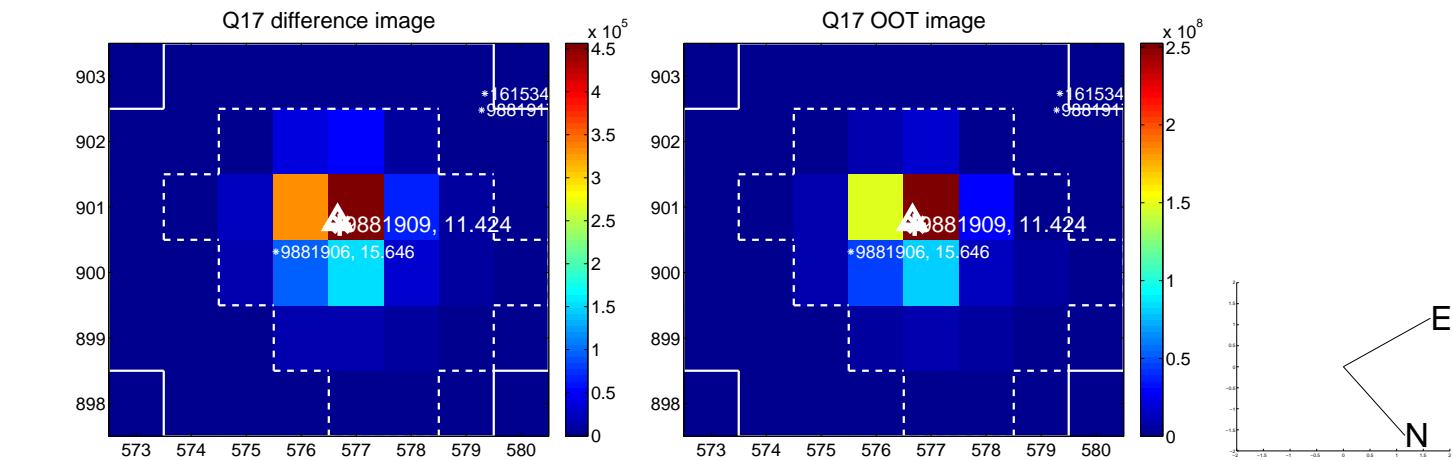
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



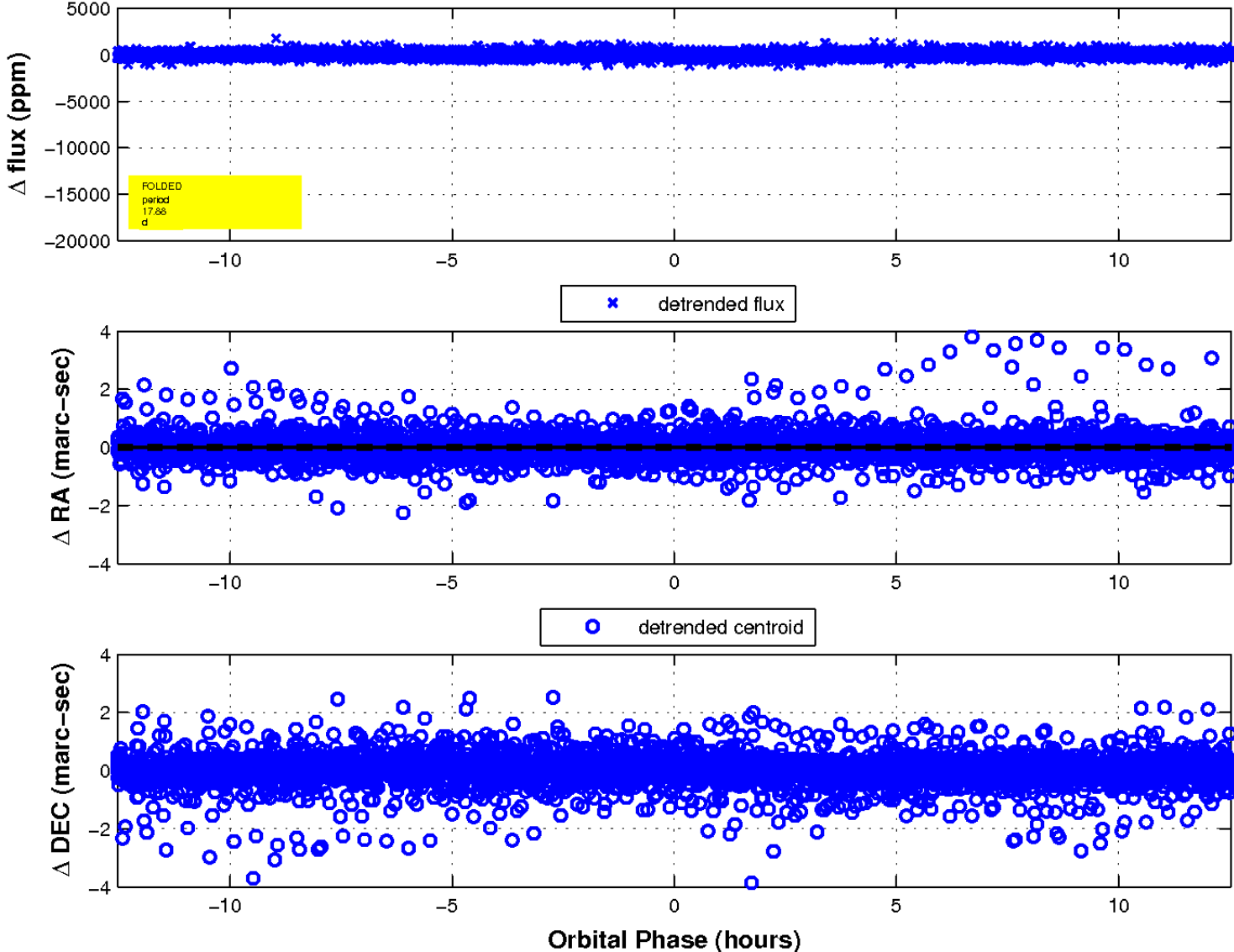
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 6 of 6



UKIRT Image

Declination

